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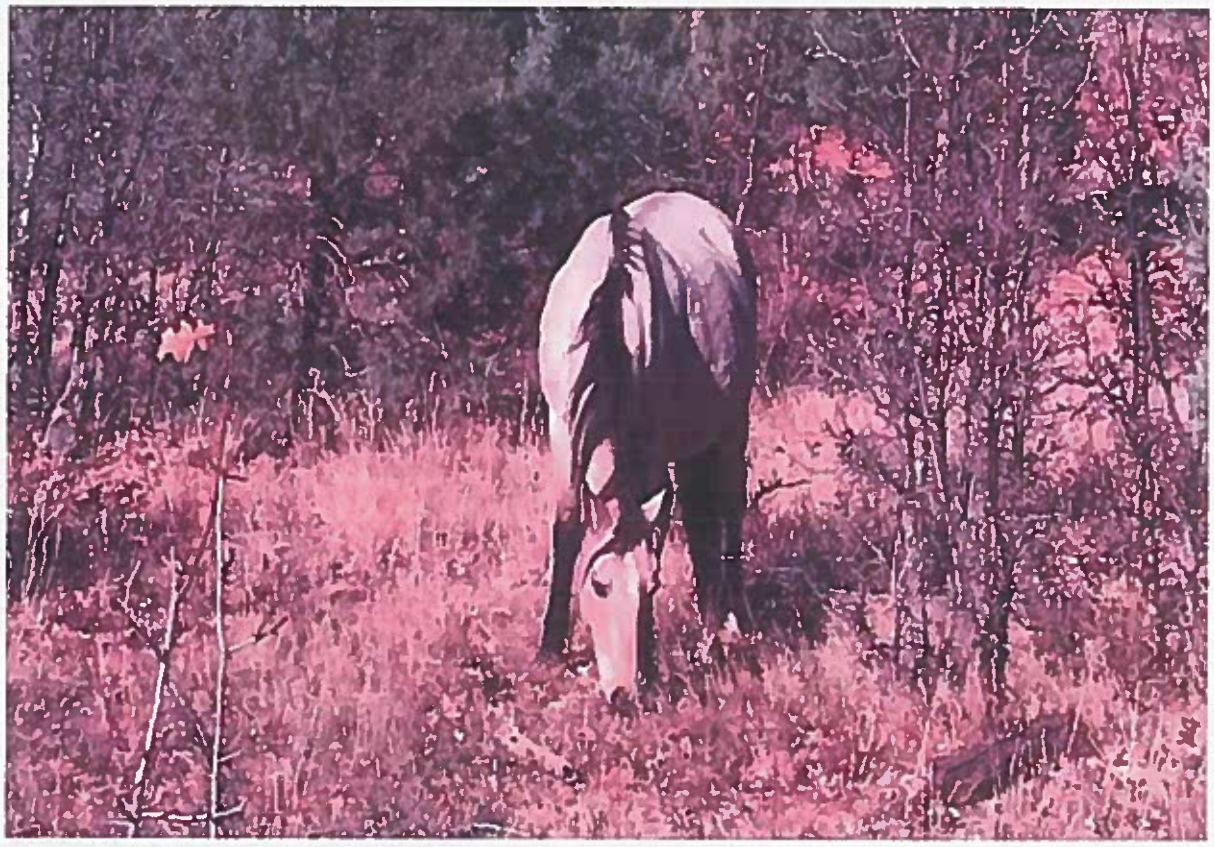
Proposed Action

Heber Wild Horse Territory Management Plan

Navajo and Coconino Counties, Arizona



Forest Service Apache-Sitgreaves National Forests Black Mesa Ranger District

January 2020

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For More Information

Project-related information can be found at the link below.

https://www.fs.usda.gov/detail/asnf/landmanagement/resourcemanagement/?cid=fseprd534313

For questions and requests regarding this project send an email to as_portal_comments@fs.fed.us

Please note this email address is not a valid submission point for comments on the project; see "How to Comment" section for details.

Overview of How this Project Process Works

1. We are sending you this document to solicit your comments on the proposed action. This initiates an official designated opportunity for commenting called "scoping". See below for instructions on how to provide comments. More detail about how to provide comments is in the cover letter you received.
2. Once we receive your comments, we will incorporate them into the proposed action and its analysis where possible. Alternatives to the proposed action will be developed as appropriate.
3. Next, we will prepare an environmental assessment in compliance with the National Environmental Policy Act and other relevant Federal and State laws and regulations. The environmental assessment and draft decision notice are subject to the objection process described in 36 CFR 218, subparts A and B.
4. Once the environmental assessment is prepared, we will make it available for review and allow another designated comment period. Only individuals or entities (as defined in 218.2) who have submitted timely, specific, written comments during designated comment periods may file an objection (218.5).
5. We will incorporate any needed changes identified during the comment period and prepare a draft decision notice based on the analysis. The draft decision notice and environmental assessment will be made available to those who commented during the comment period. This will initiate the objection period.
6. After the objection period has ended, a final decision notice will be issued.
7. Once the decision notice is completed, a territory management plan will be developed for the Heber Wild Horse Territory from the actions included in the decision.

How to Provide Comments on the Proposed Action

Deadline for Commenting on the Proposed Action

Specific written comments (36 CFR 218.2) on the proposed project will be accepted for 30 calendar days following publication of the scoping legal notice in the White Mountain Independent (Show Low, AZ). Those wishing to comment should not rely up on dates or timeframe information provided by any other source.

If you don't submit specific written comments during the 30-day comment period, you may not be eligible to object to the project during the objection period.

What to Include in Your Comments

Contact Information

Your comments must have an identifiable name attached. Comments received in response to this scoping notice, including names and addresses of those who comment, will become part of the public record for this project and may be available for public inspection. We will accept and consider anonymous comments, but we won't be able to provide additional information or documents, and people who comment anonymously will not be able to participate in the objection process.

What You Want Us to Consider

When submitting comments, keep them specific to this proposal only. If you submit comments about other proposals or areas, we will not consider them.

If you recommend changes to the proposed action, include the reasons for the changes. Comments should be within the scope of the proposed action, have a direct relationship to the proposed action, and must include supporting reasons for the responsible official to consider (36 CFR 218.2).

If you include references, citations, or additional information to be considered for this project, they must be submitted with your comment letter. You should clearly describe how the cited material or information is within the scope of the proposed action, has a direct relationship to the proposed action, and how it supports your comments and concerns. Also indicate exactly what part of the material you would like us to consider (such as page or figure number).

Where to Submit Comments

If you are submitting comments electronically, you have to use the Comment Analysis and Response Application (CARA) database at https://cara.ecosystem-management.org/Public/CommentInput?project=18916

We won't accept electronic comments sent to any other email address and we won't forward your comments to the CARA database. It is your responsibility to submit your comments to the appropriate location:

Alternatively, you may also mail your comments or hand deliver them to the Supervisor's Office between the hours of 8:00 am to 4:30 pm Monday through Friday, excluding Federal holidays.

Mail: Heber Wild Horse Territory Comments, P.O. Box 640, Springerville, AZ 85938

Fax: 928-333-5966, please mark "Attention: Heber Wild Horse Territory Comment"

Hand delivery: 30 S. Chiricahua Dr. Springerville, AZ 85938

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Introduction

This document summarizes the U.S. Forest Service proposal to develop and implement a plan to guide the management of wild horses and their habitat in the Heber Wild Horse Territory. Forest Service personnel will evaluate this proposal for potential environmental consequences in accordance with the National Environmental Policy Act. This document has been prepared to inform interested and affected parties of the proposal and to solicit comments to assist with the project-level environmental analysis of the proposal.

The Heber Wild Horse Territory is approximately 19,700 acres located in Navajo and Coconino Counties, Arizona, on the Sitgreaves National Forest in the Black Canyon area of the Black Mesa Ranger District, southwest of the town of Heber, Arizona.

Relevant Direction and Guidance

The laws, policies, and documents that guide wild horse management on National Forest Systems lands, and specifically the Heber Wild Horse Territory, are:

- the Wild, Free-Roaming Horses and Burros Act of 1971 (as amended), 16 U.S.C. sections 1331 to 40;
- 36 Code of Federal Regulations (CFR) part 222, subpart D (Management of Wild Free-Roaming Wild Horses and Burros), 36 CFR sections 222.60 to 76;
- Forest Service Manual 2200 (Range Management), chapter 2260 (Wild Free-Roaming Horses and Burros); and
- the 2015 land management plan for the Apache-Sitgreaves National Forests

The Heber Wild Horse Territory was established in 1974, pursuant to the Wild Free-Roaming Horses and Burros Act of 1971, as amended, 16 U.S.C. sections 1331 to 40. Wild horse and burro territories were identified as territorial habitat of wild free-roaming horses, burros, or both at the time of the passage of the act.[1] National forests were directed to develop and implement a territory management plan for all wild horse and burro territories.[2] The current proposed action would satisfy that requirement. The final territory management plan will be prepared in accordance with the act and Forest Service regulations regarding the management of wild, free-roaming horses and burros.[3] A territory management plan is described as an operational plan for managing one or more herd units of wild free- roaming horses and burros. The territory management plan describes the desired population level, detailed management practices, interagency coordination, and scheduling and monitoring requirements for managing each herd unit, consistent with direction established in the applicable land management plan.[4]

[1] 36 CFR section 222.60(b)(15)
[2] 36 CFR section 222.61(a)
[3] 36 CFR part 222, subpart D
[4] Forest Service Manual 2200, chapter 2260

Forest Service regulations define wild free-roaming horses and burros as "all unbranded and unclaimed horses and burros and their progeny that have used lands of the National Forest System on or after December 15, 1971, or do hereafter use these lands as all or part of their habitat, but does not include any horse or burro introduced onto the National Forest System on or after December 15, 1971, by accident, negligence, or willful disregard of private ownership. Unbranded, claimed horses and burros for which the claim is found to be erroneous, are also considered as wild and free-roaming if they meet the criteria above."[5]

The 2015 land management plan for the Apache-Sitgreaves National Forests (USDA Forest Service 2015) identified the Heber Wild Horse Territory as a management area but deferred the establishment of an appropriate management level to the Heber Wild Horse Territory management plan. The land management plan does include desired conditions, standards, and guidelines for resource protection that pertain to the entire Apache-Sitgreaves National Forests, including the Heber Wild Horse Territory. Additionally, there are four desired conditions and one standard specific to the Heber Wild Horse Territory Management Area. For more detailed discussion regarding land management plan compliance, see the "Purpose and Need" section of this document under the "Conformance with Land Management Plan Direction".

Territory Location

The Heber Wild Horse Territory is located within Township 11 North, Range 15 East; Township 11 North, Range 16 East; and Township 12 North, Range 16 East. The territory is about 2.5 to 3 miles wide by about 7 miles long, centered about 5 miles southwest of Heber, Arizona. The designated boundary runs roughly in a north-easterly direction from its southern boundary on National Forest System Road 300 to the northern boundary, which is private land. The north-northeastern portion of the territory is bounded by the community of Heber, with houses, roads, and fences. The west-northwest flank of the territory is bound by the Highway 260 corridor fence. The southeast flank is an irregular boundary comprised of ridgelines, drainages, and section lines. The Mogollon Rim, with its steep canyons and ridges, lies to the south of the territory. Figure 1 displays the delineated territory, showing the proximity of the Fort Apache Indian Reservation, the town of Heber with its associated infrastructure, and figure 4 shows the boundary fences.

[5] 36 CFR section 222.60(b)(13)

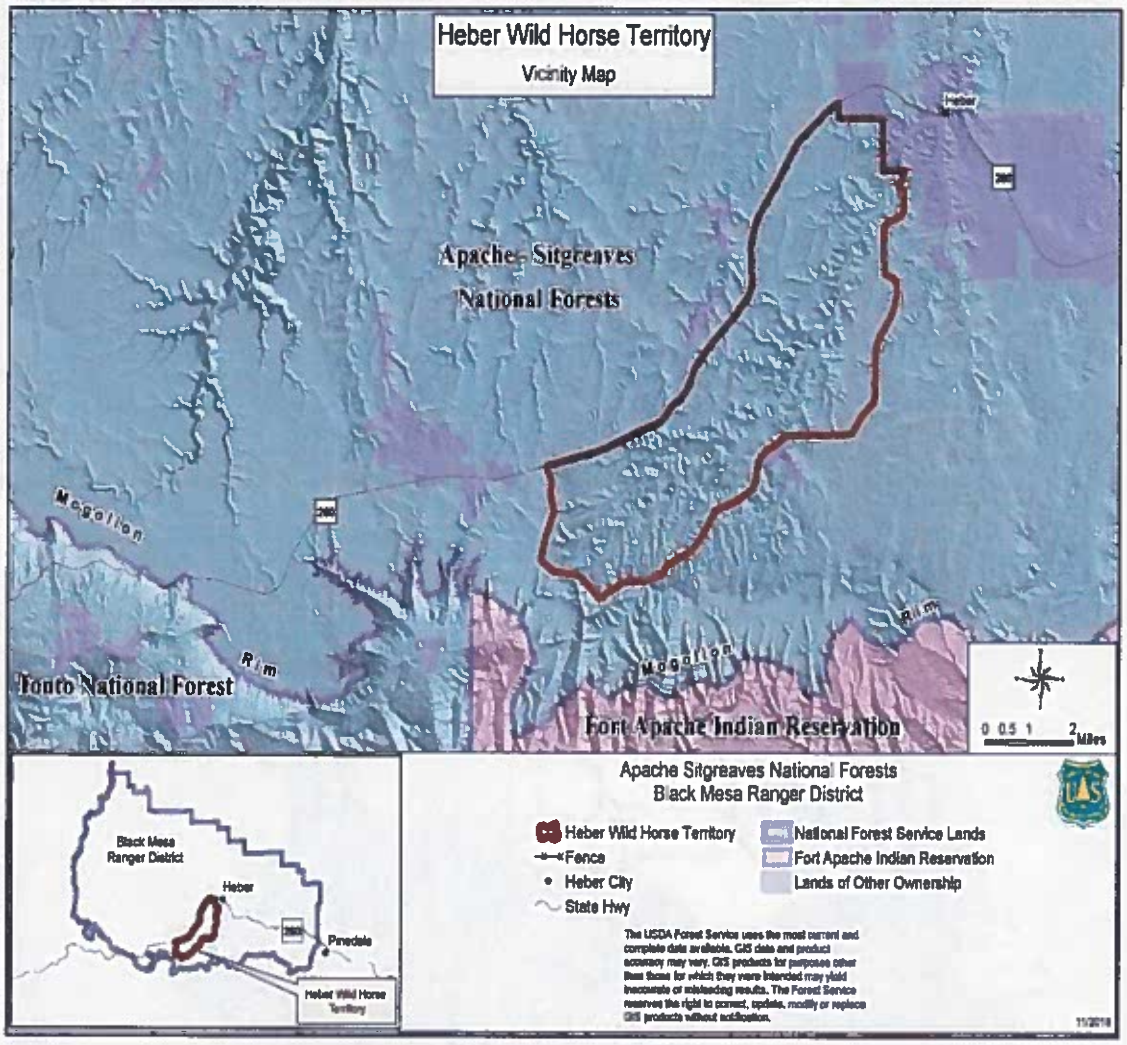

Figure 1. Heber Wild Horse Territory vicinity map

The territory overlays two livestock allotments named Black Canyon and Heber, 60 percent of the Black Canyon allotment and six percent of the Heber allotment overlap with the Heber Wild Horse Territory (figure 2). Permitted livestock grazing within the Heber Wild Horse Territory includes King Phillip, Sharp Hollow and Stermer pastures of the Black Canyon allotment and parts of the Gentry and Bunger pastures within the Heber allotment.

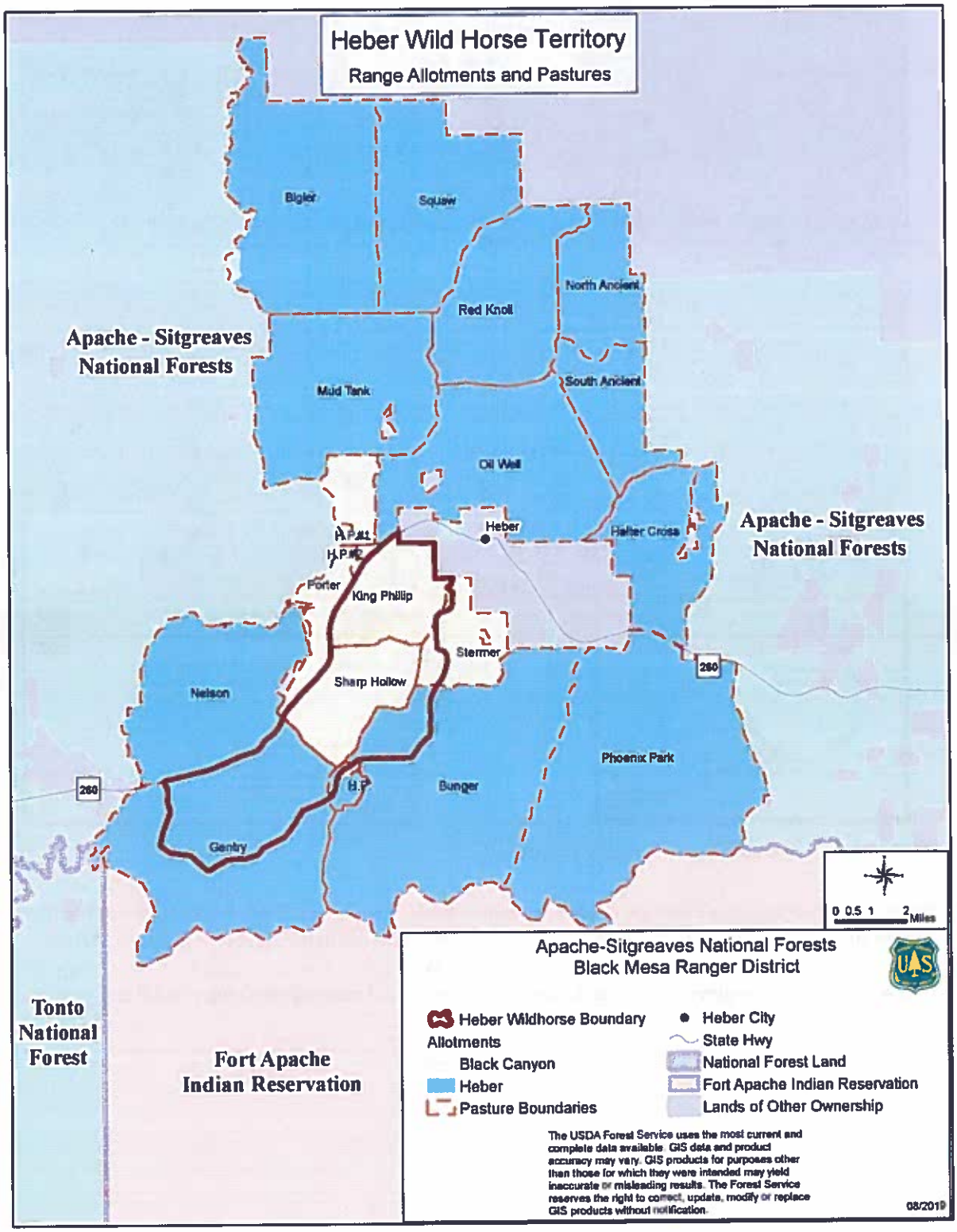

Figure 2. Heber Wild Horse Territory and grazing allotments

Territory History

When the territory was established in 1974, a letter from the forest supervisor to the regional forester indicated the territorial use of the area and included the first recorded census (seven horses). That letter included notations that the stallion may have been sterile because no foals were seen for several years. In 1976, five horses were reported, and the number of horses ranged from five to eight until 1993 when the Heber district ranger reported to the forest supervisor only two mares remained (USDA Forest Service 1993a).

Since that time, an influx of horses onto the Heber territory has been on-going for many years. Although it has not been done on public ranges for decades, the practice of keeping free-ranging horses (horses that are not restricted to a particular area) for potential use by a livestock association or an individual still occurs in parts of the Southwest. This is true of the Fort Apache Indian Reservation that forms the southern boundary of most of the Black Mesa Ranger District (figure 1). According to a letter from then District Ranger Klein (USDA Forest Service 1993a), until the reservation boundary was first fenced, Reservation horses moved freely back and forth across property boundaries. As livestock production on National Forest System lands became more regulated, free-ranging horses were steadily removed either by herding them back over the reservation boundary or by removing them to auction. According to allotment inspection notes, correspondence, and general allotment notes (District 2210 files), from the 1980s to the 1990s, horses continued to move back and forth between the reservation and the district wherever boundary fences needed repair or gates were left open. It was common for the northern boundary fence along the reservation and Forest Service boundary to fall into disrepair during winters and require significant maintenance before cattle could be turned on to the allotments the following spring (District 2210 files). This need for fence maintenance has been the subject of at least one memorandum of understanding and other correspondence between the Apache-Sitgreaves National Forests and the White Mountain Apache Tribe (USDA Forest Service 2240 files).

In June of 2002, the 460,000-acre Rodeo-Chediski Fire resulted in extensive damage or destruction of the boundary fence. This fire burned about 40 percent on the Apache-Sitgreaves and 60 percent on the reservation. About three-fourths of the Heber Wild Horse Territory was involved in the fire. Immediately following the fire, there was minimal forage available in the burned area and horses and wildlife alike had to move to wherever forage, cover, and water could be found. By the winter of 2002, the reservation had substantially reconstructed the boundary fence. However, there were still gaps in this fence, as it took longer to install gates and cattle guards. Also, as dead trees began to decay and fall they damaged the new fence, so there was no effective barrier to livestock for several more years. This provided easy access to the Apache-Sitgreaves for horses, and they began to establish themselves on a more permanent basis throughout the 166,000 acres the fire burned on the Apache-Sitgreaves National Forests.

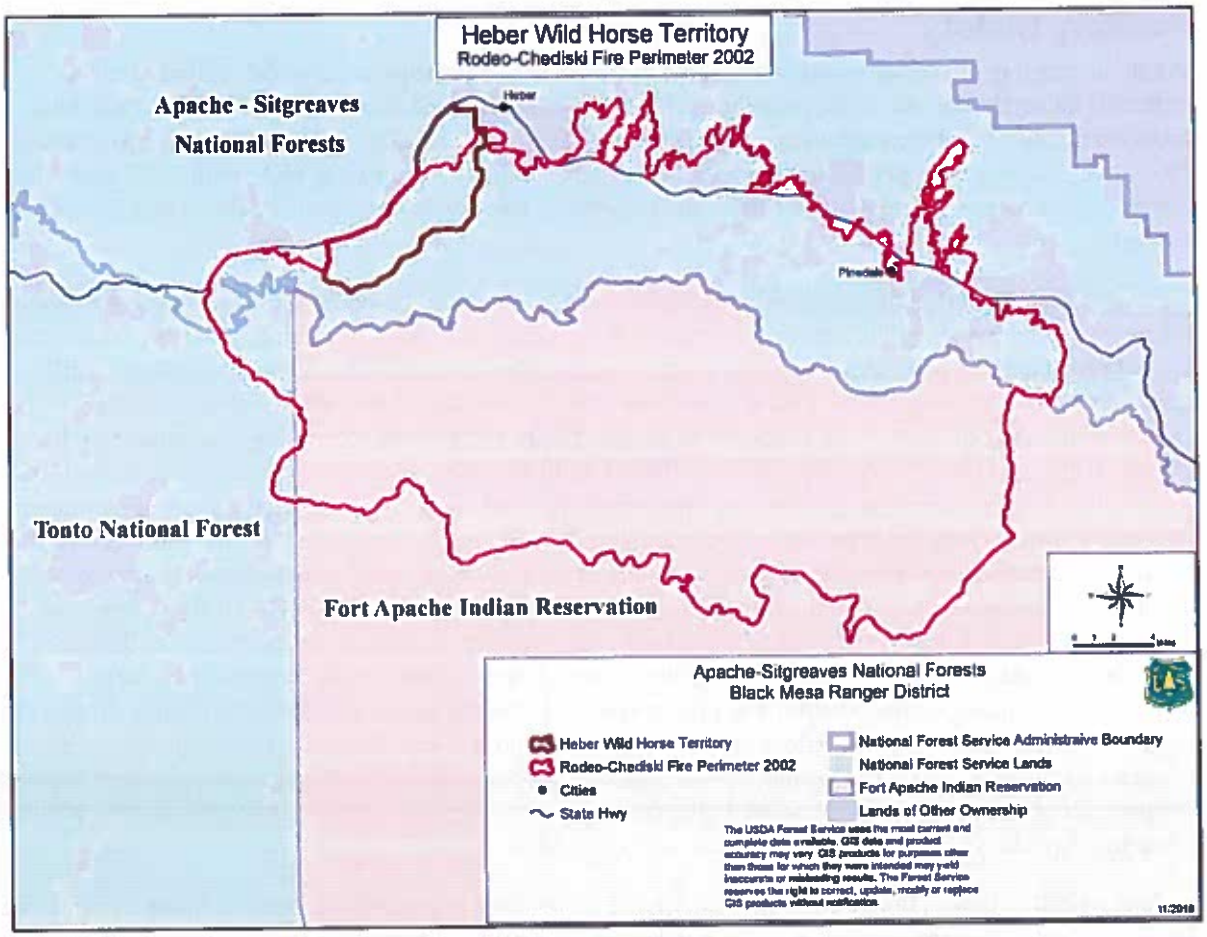

Figure 3. Rodeo-Chediski Fire perimeter

Burned area rehabilitation projects began during the summer and fall of 2002. To provide soil stabilization, many of these projects involved seeding of grasses. As grass seedlings emerged, they became desirable forage for horses and some wildlife. In 2005, based on concerns that the increased number of free-ranging horses was adversely impacting the recovery of the burned lands, Apache-Sitgreaves personnel advertised a contract to gather and remove unauthorized livestock accessing the Apache-Sitgreaves National Forests in an area corresponding to the Rodeo-Chediski Fire. Prior to completion of the contracting process, a lawsuit was filed and the Apache-Sitgreaves was enjoined by the court from proceeding with any gather of horses. The lawsuit was settled by a stipulation agreement that, among other things, prevented any gathering until a wild horse territory management strategy was developed which would be incorporated into the territory management plan.

In 2016 and 2017, an ethnographic study was conducted by a Forest Service historian to inform the deciding official about the relationship of the current horse population to the horses on the territory when it was designated (USDA Forest Service 2017). The study included conducting and synthesizing oral histories given by ten people with various associations with the territory. The study was not meant to be exhaustive or definitive, rather to provide the deciding official with various perspectives of the history of the horses. The summary of findings and recommendations from the ethnographic study are included below.

Summary of Findings from the ethnographic study (USDA Forest Service 2017)

"Of the ten interviews completed, all interviewees who had good to extensive knowledge of the territory and area corroborated similar stories, despite numbers and dates occasionally remembered differently.

There were around 7 horses in the 1960s and 1970s when the territory was first created. A hard winter in 1967-1968 left the stud or stallion sterile (one source indicates 1983). There were no more foals within that original herd after that winter or any subsequent years. The herd dwindled down to 2 horses, which likely died of old age.

Of those interviewees who had extensive knowledge of that herd stated those horses originally came from retired Army remount horses no longer needed after World War I. They were turned out to the area sometime in the 1930s.

Between the 1980s and 1990s, new horses began entering the Forest and Territory from the southernFort Apache Reservation due to growing issues with the fencing.

After the Rodeo-Chediski Fire in 2002, all interviewees stated that the fencing separating the Territory and the Fort Apache Reservation had severe issues and allowed numerous horses to pass onto the Forest and Territory. The fencing persists as an issue still today. All interviewees with knowledge claim the resultant herd(s) today are horses that have passed from the Fort Apache Reservation to the Forest and Territory. None of the horses are from the original designated herd.

The interviewees also contributed additional information and included anecdotes regarding personal opinions, wildlife/habitat issues, over-grazing and limited allocation for grazing permits, as well as enjoyment in seeing the horses on the Forest. Only information related to the interview questions is included in the interview summaries above, however, this additional information can be found in the individual interviews included in the Appendix."

Recommendations from the ethnographic study (USDA Forest Service 2017)

"The history of the area horse herd(s) suggests that there are two periods of occupation. The first period dates between the 1930s to c. 1990, followed by a second period that dates from c. 1990 to the present.

The first period encompasses the originally designated herd of seven horses, which more than likely descended from the turned-out Army remount horses or other turned-out horses in the 1930s and then dissipated by c. 1990. The current horse population dating from c. 1990 appears to be a mixture of horses from the Fort Apache Reservation and other unidentified horses with no substantiated link with the originally designated herd.

As such, this study concludes that there is no historical precedent for the current population occupying the area. The history of the horse herds does not provide any conclusive, historical basis for how to designate the horses for the future as the originally designated herd does not appear to be extant.

Therefore, it is the recommendation of the author that the Forest and interested parties determine future direction and management of the Territory based on the current condition and population of horses."

Current Horse Population Estimates

Apache-Sitgreaves National Forests personnel commissioned flights in 2014, 2015, and 2017 specifically to estimate the horse populations. They included a larger area across the Sitgreaves National Forest, extending the survey area east from Linden to Show Low. These latest surveys (2014, 2015, and 2017) were conducted using the same protocols and the data subjected to the same statistical analysis, making the results directly comparable. The flight patterns were altered based on the statistician's analysis. The flights for the May 2014 survey were conducted on a grid that covered the territory and included areas across the Sitgreaves National Forest where horses had recently been observed. Global positioning system (GPS) waypoints were collected during the flights to show the coverage. Six flights occurred over two days (May 12 and 13). GPS waypoints were also collected for every horse observation. The protocols, statistical analysis, and flight pattern were replicated in February 2015 and April 2017. The flight pattern and survey coverage for all the flights are displayed in the appropriate management level analysis document in the project record. The results of these three surveys are displayed in table 1 and table 2.

Table 1. Horse-specific survey within the Heber Wild Horse Territory, May 2014, February 2015, and April 2017

Date of survey	Horses observed	Estimated Population[1]
5/12 to 14/2014	18	16 to 21
2/17 to 19/2015	16	9 to 32
4/18 to 19/2017	27	22 to 51

[1] Based on photo mark-recapture methodology (Lubow and Ransom 2009)

Table 2. Horse-specific survey outside the Heber Wild Horse Territory, May 2014, February 2015, and April 2017

Date of survey	Horses observed	Estimated Population[1]
5/12 to 14/2014	184	177 to 258
2/17 to 19/2015	201	204 to 294
4/18 to 19/2017	272	270 to 420

[1] Based on simultaneous double-count methodology

Factors Affecting Horse Use Patterns

The elevation in the territory ranges from about 6,700 feet at the northeast boundary to about 7,700 feet at the southwest boundary. The vegetation ranges from transitional pinyon/juniper at the lower elevation to mixed conifer on the higher northern aspects, with ponderosa pine as the primary vegetation type. According to the Western Regional Climate Center (2015), in about one out of 20 winters, snowfall accumulates to levels of 30 inches or more, which likely would cause horses to migrate to areas of lower elevation in order to survive. The flatter terrain to the northeast offer lower elevation (and therefore less snow accumulation) and the canyons to the south of the territory offer more shelter from the wind than the area within the territory.

Crane and others (1997) found horses move from lower to higher elevations in the summer and back to lower elevations in the winter where access to feed is less hampered by snow accumulation. Salter and Hudson (1979) found while horses will paw through snow to get to forage, areas that remained snow free or had reduced snow depth throughout the winter were favored and more heavily utilized. Wockner and others (2003) found horses prefer lower elevation and drier habitats during the winter. However, in the summer, horses prefer flatter areas with higher elevations, lower canopy cover, and proximity to water.

All of these studies corroborate what appears to be happening in this project area based on information gathered thus far. Large ungulates are known to migrate off the Mogollon Rim in the winter to the canyons located to the south (Arizona Game and Fish Department 2014, personal communication). The horses in the area may be behaving similarly, but there is a lack of monitoring data to support or dispute this assumption. To better understand horse use of the territory and movement outside the territory, the proposed action includes a monitoring plan (see monitoring section under the proposed action). This information could be used to refine the adaptive management plan based on gained knowledge.

To further understand how horses are using the area, historic and current district files (USDA Forest Service 2210 files) including range inspection forms, correspondence, allotment management plans, stocking records, production and utilization studies, general file notes, as well as incidental observations and the aerial survey results discussed above will be examined, along with any other information gathered during the environmental analysis. Based on what is known at this point, it appears that spring-to-fall horse use is currently occurring in the southern (higher elevation) portion of the territory and locations outside of the territory. The general area of horse observations during the latest aerial surveys (winter and spring) are displayed in figure 4.

The fences in the area (see figure 4) are grazing allotment fences that were in place when the territory was delineated and continue to be maintained today. If the areas of known horse use are compared to the existing fences in the area, it appears the fences (other than the boundary fence between the Apache-Sitgreaves and the Fort Apache Indian Reservation) may be restricting the horses to the southern and eastern portions of the analysis area, with most horse use occurring outside the designated territory. There are many fences, houses, and roads associated with the private lands to the northeast and the highway corridor with a well-maintained fence along the western flank. There are times when fences, including the fence to the south between the Apache-Sitgreaves National Forests and the Fort Apache Indian Reservation, are periodically ineffective due to gates being left open, trees falling on the fence line, and fence lines being cut for multiple reasons.

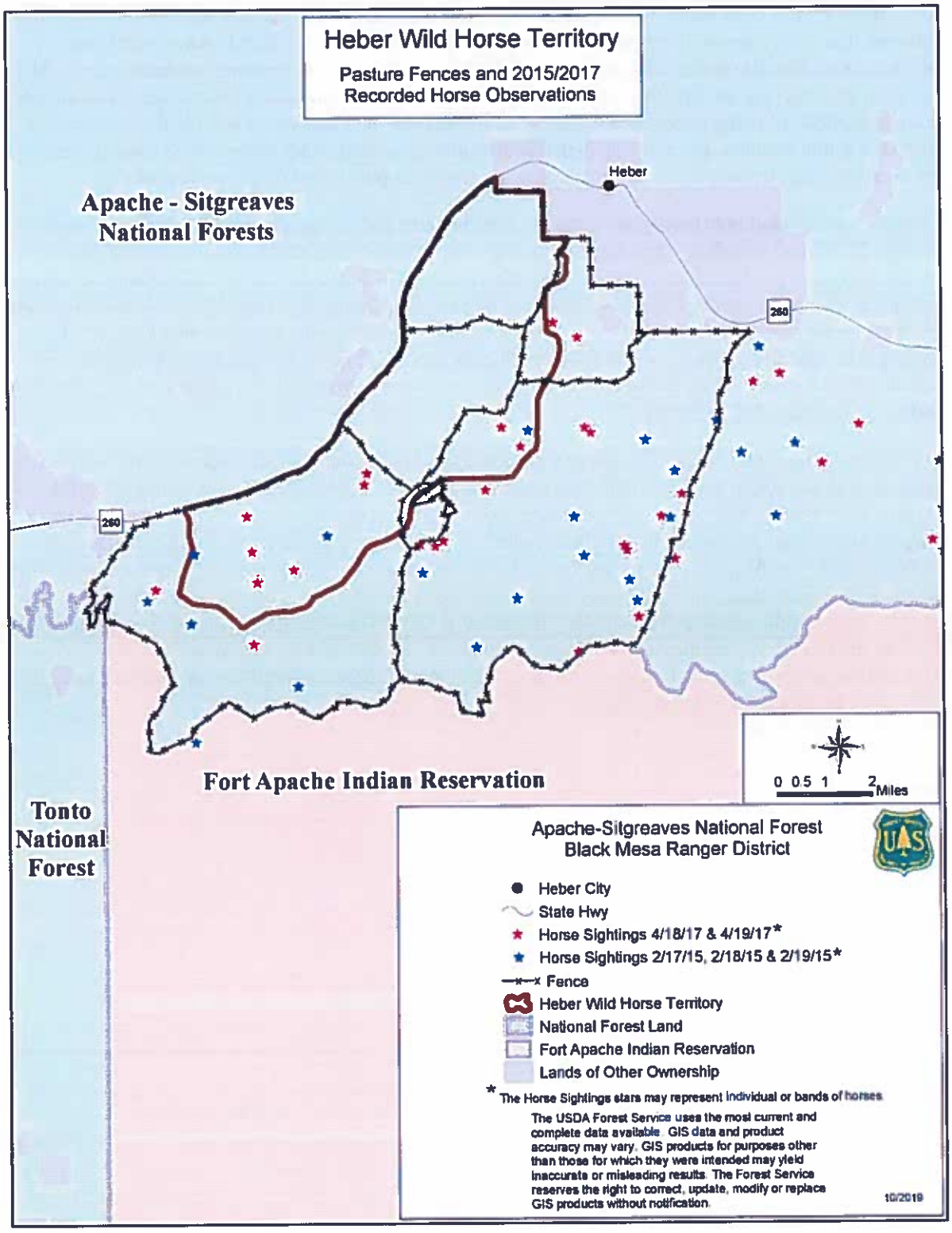

Figure 4. Map showing overview of fences and recorded observations of horses during February 2015 and April 2017

Collaborative Working Group

In August 2017, Arizona State University's School of Sustainability convened an extended dialogue with a diverse group of stakeholder representatives about the future of the Heber Wild Horse Territory on the Apache-Sitgreaves National Forests. Members of this independent working group were selected by Arizona State University to represent interests related to management of the Heber Wild Horse Territory—wild horse advocates; ranchers; wildlife managers; and professionals in equine recreation and training, range science, and veterinary medicine. The overall goal of the formation of the working group was to convene a diverse group of citizens to seek informed, creative, solution-oriented recommendations for consideration by Apache-Sitgreaves staff as they make decisions related to the Heber Wild Horse Territory management plan. Forest Service, Arizona Game and Fish Department, and the Arizona Department of Agriculture personnel participated as observers to the working group.

Arizona State University's collaborative working group contributed a range of perspectives and expertise to the initial stages of the Heber Wild Horse Territory management plan effort. The group ultimately provided a report with recommendations, which the Forest Service personnel reviewed in developing the proposed action.

Working in cooperation with Southwest Decision Resources, Arizona State University personnel planned and facilitated discussions over a 15-month period, from August 2017 to October 2018. The process included 11 formal working group sessions (including a field visit to the territory) and numerous smaller task group meetings and discussions. Working group participants reviewed relevant documents, drew on input from Apache-Sitgreaves personnel, scientific publications, and from their respective constituencies, and engaged in frank conversations to arrive at their recommendations.

Purpose of and Need for Action

Given the progression of events from the 1970s when the territory was established to current population conditions and because there is no definitive historical or biological basis to establish a connection or disconnection between the original protected band for which the territory was designated and the current horse population, the unbranded and unclaimed free-roaming horses currently associated with the Heber Wild Horse Territory will be managed under provisions of the act as wild horses. The proposed action and resulting management plan for the Heber Wild Horse Territory, when completed, will guide management of these horses and their habitat, including setting an appropriate management level of wild free-roaming horses for the territory.

The need for the project is to ensure the herd is managed to maintain a self-sustaining population of healthy animals within the designated territory, in a thriving natural ecological balance with other uses and the productive capacity of their habitat.

The purpose of the proposed action is to develop and implement a territory management plan for wild horse management actions within the Heber Wild Horse Territory, consistent with the authority provided in the Wild Free-Roaming Horses and Burros Act of 1971 (the act), as amended; the Multiple Use Sustained Yield Act; the National Forest Management Act; Forest Service regulations at 36 CFR Part 222, subpart D; the land management plan for the Apache-Sitgreaves National Forests; and other guiding laws, regulations, and policies. The proposed action would identify management actions and monitoring objectives for future management of the herd and their habitat.

Thriving Natural Ecological Balance

A thriving natural ecological balance can be described as balancing wild horse management with other multiple uses that assures significant progress is made toward meeting desired conditions, standards, and guidelines identified in the 2015 land management plan for the Apache-Sitgreaves National Forests. This includes considering upland vegetation and riparian plant communities, watershed function, and habitat quality for animal populations. It also includes other site-specific or landscape-level objectives, such as those necessary to protect and manage threatened, endangered, and sensitive species. To help meet a thriving natural ecological balance, the following desired ecological conditions have been identified:

- Vegetation is moving toward moderate to high similarity with the potential natural vegetation for the various terrestrial ecological unit inventory (TEUI) mapping units within the territory, where there is site capability.
- Desirable grass species are healthy, vigorous, diverse, and achieving maximum production for their mapping units. Cool season grasses and forb plants make up at least 50 percent of the herbaceous ground cover (as site potential allows). Desirable grass species are healthy, vigorous, diverse, and achieving maximum production for their mapping units. Desired browse species are well distributed and healthy, age classes are well distributed, and growth forms are not "clubbed" in appearance.
- Soil and watershed conditions are satisfactory or approaching satisfactory on capable and potentially capable rangeland. The percent of good ground cover (plant basal area and litter) will be at least at a level to prevent accelerated soil loss (at or above soil loss tolerance) as described in the terrestrial ecosystem unit inventory for the Apache-Sitgreaves National Forests. Ground cover level on noncapable range will be managed to its maximum natural potential to minimize sediment production as described in the inventory.
- Riparian habitats are in or are trending toward proper functioning condition. Where potential exists, deeply rooted plants such as sedges occupy stream banks stabilizing those banks. Where potential exists, riparian woody plants are established and maintained in a healthy condition, with a mix of age classes present. Springs have riparian species present, and the vegetation is in satisfactory condition.
- Herbivore grazing is not contributing to reduced water quality from sediment or other non-point source pollutants. Best management practices are implemented and monitored to ensure water quality is maintained or improved throughout the territory.
- Forage is available to big game species to help maintain healthy populations. A diverse mosaic of habitats for healthy and balanced wildlife populations is present. All wildlife species have abundant, widely spread foraging habitat. Prey species have habitats with good hiding cover and forage availability. Management indicator and threatened, endangered, and sensitive species are provided the habitat needed to sustain or increase their populations, as desired for individual species management objectives.
- Wild ungulate, permitted livestock, and horse use does not exceed the estimated grazing capacity. Structural range improvements are well maintained and in good condition. Dependable water sources are well distributed. Occupancy by unauthorized livestock is minimized.

Conformance with Land Management Plan Direction

The 2015 land management plan provides management direction for the Apache-Sitgreaves forestwide, and 12 management areas, including the Heber Wild Horse Territory. Management area direction provides specific direction on how to manage different land areas in addition to forestwide direction. The Wild Horse Management Area prescription accounts for the 19,700 acres that make up the territory, in addition a Community-Forest Intermix Management Area overlaps a small portion (939 acres) of the Heber Wild Horse Territory. Therefore, on these 939 acres, specific plan direction for the Community Forest-Intermix Management Area (desired conditions and guidelines) have also been considered. The plan also states Forest Service personnel will work with the public to develop a Heber Wild Horse Territory management plan to direct management of the territory. This proposed action has been evaluated by the interdisciplinary team for consistency with all relevant land management plan direction.

Desired conditions identified in the land management plan for the Heber Wild Horse Territory

- Grazing is in balance with available forage (grazing and browsing by authorized livestock, wild horses and wildlife do not exceed established use levels).
- Horse numbers within the territory are aligned with the appropriate management level as described in the Heber Wild Horse Territory management plan.
- The Wild Horse Territory Management Area contains landscapes that vary from moderately altered where human activities are evident (low scenic integrity) to natural appearing where human activities do not stand out (high scenic integrity).
- Recreation opportunities range from semiprimitive nonmotorized to roaded natural.

Guidelines identified in the land management plan for the Heber Wild Horse Territory

- If wild horse populations exceed the appropriate management level, horses should be removed in accordance with the wild horse territory management plan (when completed).

Proposed Action and Decision Framework

The deciding official for the Apache-Sitgreaves National Forests Heber Wild Horse Territory Management Plan will be the forest supervisor. Given the purpose and need for action, the deciding official will select a management strategy for the Heber wild free-roaming horse herd and its habitat. The selected management actions, together with the associated management and monitoring, will guide management of the Heber Wild Horse Territory over the life of the plan.

An environmental assessment will be prepared, which will analyze the environmental effects associated with development and implementation of the proposed action. The environmental assessment will be made available to the public for a review and comment period.

The proposed action includes the following components that will be incorporated into development of a management plan for the Heber Wild Horse Territory. Each of these concepts is summarized in the following paragraphs, described in more detail below and in appendices A through E.

The forest supervisor will decide on the following components for the territory management plan:

- Identify an appropriate management level for wild horses for the Heber Wild Horse Territory.
- Establish an adaptive management process to identify possible management actions that may be implemented based on monitoring results. Potential management actions are listed below and described in more detail in the appendices.
- Identify potential components needed to develop a monitoring plan to evaluate if, when, and what type of management action is needed, if the territory management plan is being implemented properly, and to determine the effectiveness or need for change to the management plan.
- Identify comprehensive animal welfare standards to be incorporated into management actions.
- Establish the thresholds and indicators to determine when excess horses are present and the potential management actions that may be taken.
- Establish the need for development of an excess animal removal plan. A removal plan will be developed for any proposed removal action and approved by the deciding official. Relocation of removed animals must be to one or more of the following:
    - Some other area designated as a wild horse and burro territory, if suitable habitat and grazing capacity is available.
    - Care and custody of other parties under private maintenance agreements such as private adoption, sanctuaries, long-term holding facilities, or a combination of these things.
- Identify facilities, improvements, or both to be implemented as part of the proposed action.

Once the decision notice is completed, a territory management plan will be developed for the Heber Wild Horse Territory.

Appropriate Management Level

The proposed action would establish an appropriate management level for wild horses within the Heber Wild Horse Territory based on an in-depth analysis of population inventory, resource monitoring, and other current available data and information. A preliminary analysis was completed by Forest Service personnel to determine the proposed appropriate management level for the Heber Wild Horse Territory. This analysis is summarized here and detailed further in the appropriate management level report (USDA Forest Service 2018).

Methodology

The appropriate management level analysis followed the multi-tiered analysis process described in the Bureau of Land Management Wild Horses and Burros Management Handbook H-4700-1, appendix 3 (USDI Bureau of Land Management 2010) to determine the appropriate management level of horses. The analysis process includes these three tiers:

- **Tier 1:** Determine whether the four essential habitat components (water, forage, cover, and space) are present in sufficient amounts to sustain healthy horse populations and healthy rangelands over the long term.
- **Tier 2:** Determine the amount of sustainable forage available for horse use.
- **Tier 3:** Determine whether the projected horse herd size is sufficient to maintain genetically diverse horse populations (avoid inbreeding depression).

An appropriate management level is expressed as a range with an upper and lower limit. The upper limit is the number of animals which results in a thriving natural ecological balance and avoids deterioration of the range (the number calculated through this analysis). The lower limit is set at a number that allows the population to grow to the upper limit over a 4- to 5-year period, without any interim gathers to remove excess animals.

As described further in the "Proposed Appropriate Management Level Determination," Forest Service personnel are proposing an appropriate management level for the Heber Wild Horse Territory of 50 to 104 horses based on the following:

- **Tier 1** determined two of the essential habitat components, water and forage, are sufficient most years to support wild free-roaming horses. There is some question about the cover and space components. Horses are using areas outside the territory while not utilizing the entire territory, but this does not appear to be due to a lack of forage, water, or cover. Horse use monitoring is needed to determine the reasons for the lack of use.
- **Tier 2** determined there is enough forage within the territory to support an upper limit of 104 wild free-roaming horses, while still meeting management direction for other resources. The lower limit of the appropriate management level was set at 50 to allow the herd size to grow (assuming an annual increase of approximately 20 percent) over 4 to 5 years without the need for interim gathers.
- **Tier 3** recommends periodic genetic analysis, and if the data show the herd is not maintaining genetic diversity, management actions would be taken.

Adaptive Management

The proposed action is based on adaptive management, a process or model that incorporates monitoring and assessment information to determine if changes are needed. An adaptive management process is proposed which identifies the thresholds to be used to determine when potential management actions are warranted, and which methods may be implemented once those thresholds are reached. Appendix B shows the adaptive management practices that may be applied under this proposal.

Objectives to be Addressed by Adaptive Management

- Maintain or improve ecological conditions in the uplands and riparian areas on the Heber Wild Horse Territory.
- Maintain and improve horse habitat where needed in the territory
- Maintain horse populations within the appropriate management level and ecosystem health parameters
- Maintain healthy horse populations
- Individual horse bands are disbursed, are able to access areas throughout the territory, or both
- Ensure horse health and welfare of horses during handling (gathers, administer contraceptives, etc.)

Adaptive management is designed to provide sufficient flexibility to allow implementation of management actions to address changes in climatic conditions that result in changes in available forage and water resources. Design criteria will be incorporated into the project to protect and enhance forest resources such as soil, vegetation, and riparian habitats, as well as to maintain or make progress toward desired conditions (see appendix A for a description of design criteria).

Under the adaptive management approach, regular or annual monitoring may suggest the need for changes in horse management. The need for adaptation would be based on the magnitude or repeated reoccurrence of deviations from guidelines provided, or due to indications of lack of progress toward desired resource conditions. The timing of such management changes would reflect the urgency of the need for adaptation. If monitoring indicates progress toward desired conditions is not being achieved, herd management may be modified.

Management Actions Toolbox

Monitoring results would be used to inform adaptive management actions. If monitoring results indicate land health or animal health concerns (thresholds), adaptive management responses could be implemented to correct or improve conditions. All design criteria and best management practices identified in appendix A would apply to the use of these tools. Appendix B includes a table of all monitoring to be implemented including objectives, indicator, methodology, and the threshold for management action to achieve and maintain desired conditions.

Population management will be prioritized by the least invasive and least disruptive methods to horse bands and horse behavior. The following management tools may be used to help meet objectives if existing conditions show or monitoring indicates a need.

Tools to Manage Population Growth

- Use of population management methods identified in appendix D; including use of immunocontraceptives, sterilization, bait and passive gather, removal, and relocation.
- Alter the ratio of male to female animals to reduce population growth by controlling the release of captured male or female animals back into the territory
- Alter the herd age distribution to reduce population growth by controlling the release of certain age classes back into the territory

Tools to Change Patterns of Horse Use

- Increase fence permeability by widening existing gates or installing additional gates. Ensure gates are open when livestock are not present
- Develop additional water sources
- Fence sensitive areas being impacted by horses
- Bait, passive gather, and relocate horses

Tools to Maintain Horse Health and Habitat

- Vegetation treatments including, but not limited to, juniper removal, mechanical thinning, and prescribed burning within Heber Wild Horse Territory
- Management actions to maintain or increase genetic diversity such as introducing one to three young animals from outside the area to maintain or increase genetic diversity
- Develop a response plan to implement during emergency situations such as severe drought or a public health emergency

Monitoring

Short-term and long-term monitoring would continue in and around the Heber Wild Horse Territory to evaluate wild horse management and its effect on resource conditions. Under the adaptive management approach, regular monitoring may suggest the need for changes in horse management. The need for adaptation would be based on the magnitude or repeated reoccurrence of deviations from guidelines provided, or due to indications of lack of progress toward desired resource conditions. The timing of such management changes would reflect the urgency of the need for adaptation. If monitoring indicates progress toward desired conditions is not being achieved herd management may be modified.

Types of Monitoring

- Baseline monitoring is used to determine existing or baseline conditions. Monitoring will be used to assess resource conditions and gain knowledge and understanding of the horse herd, horse use and movement of the herd. Genetic testing for genetic depression may occur to establish a baseline and monitor for inbreeding. This will help inform whether we need to take management actions within the scope of the plan or make adjustments to the plan itself. Several current sources of information are available which show the existing condition in the Heber Wild Horse Territory.
- Effectiveness monitoring is used to monitor trends to determine deviation from baseline conditions and to determine movement toward or away from desired conditions. Effectiveness monitoring informs adaptive management by identifying indicators which will be monitored relative to thresholds to identify when a management action may be needed. This could be used to evaluate forage and water availability and seasonal distribution of animals at established time points. Effectiveness monitoring may occur in upland landscapes, riparian landscapes, or both.
- Implementation monitoring is used to determine if the actions as described in the management plan and the scope of the environmental analysis decision are meeting intended effects. Implementation monitoring may include resource use indicators such as utilization as well as animal health observations.
- Monitoring is used to inform whether the criteria for excess horses have been met. One of the objectives of the effectiveness monitoring in the context of adaptive management is to determine if excess horses exist, and any need for management action. This also allows evaluation of the need for change in the territory management plan.

Various potential monitoring protocols are described in appendix B.

Criteria for Determining Excess Horses

Periodically, it may be necessary to remove excess animals from the Heber Wild Horse Territory to assure that populations are maintained consistent with the needs of the forage base and other uses in the area. Prior to the implementation of any horse removals, an excess animal removal plan would be developed per Forest Service Manual R3-2200-91-1 and approved by the forest supervisor. See appendix E for components that should be considered and incorporated into any excess animal removal plans.

Thresholds that may identify the need for removal of excess horses are listed below. Threshold exceedance would indicate the need for additional data collection to inform the deciding official on determinations for removal of excess horses.

Thresholds

- Upper level of appropriate management level is exceeded.
- Horses are occupying areas outside of the Heber Wild Horse Territory not designated for their long-term maintenance
- Utilization in key grazing areas exceeding 35 percent utilization on over 30 percent of the key monitoring areas for two consecutive years or any 2 years out of 5.
- When the Standard Precipitation Index[6] reaches a value of minus 1.00 or less for the preceding 12-month period, the Heber Wild Horse Territory should be evaluated for existing drought conditions.
- Key grazing areas are sampled for ecological conditions and show the vegetation and soil stability conditions are trending downward for 3 measurement periods.
- Resource damage is occurring in a sensitive area such as but not limited to springs, riparian areas, threatened and endangered species habitat, and horses are identified as a contributing factor.
- Animal health condition is at risk, identified by body condition scores or other signs that indicate that horses' well-being is compromised.

The following indicators will be monitored to help determine whether the thresholds listed above have been met or exceeded. Appendix B describes the methodology that could be used to monitor these indicators.

Indicators to consider (monitor) for determining excess horse populations:

- Range analysis
  - Herbaceous species composition
  - Water availability
- Soils information
  - Ground cover
- Forage production-utilization studies, including the levels of desired use by those herbivores competing for the forage base.
  - Forage availability and utilization on herbaceous and woody browse plants.
- Horse populations
  - Number of adult horses and foals; reproductive rates
  - Horse movement and locations
  - Water availability

Resource and Facilities Improvements

Structural and nonstructural developments or improvements may be implemented to enhance the land for multiple use (including horse occupancy), to mitigate grazing impacts to natural resources, or both. The

[6] The Standardized Precipitation Index is a widely used index to characterize meteorological drought on a range of timescales. On short timescales, the index is closely related to soil moisture, while at longer timescales, it can be related to groundwater and reservoir storage. The index can be compared across regions with markedly different climates. It quantifies observed precipitation as a standardized departure from a selected probability distribution function that models the raw precipitation data.

proposed action includes installing seven roadside dirt tanks, two working facilities, and one fence, which would be used as a trap or holding fence. See figure 5 for locations of facilities proposed.

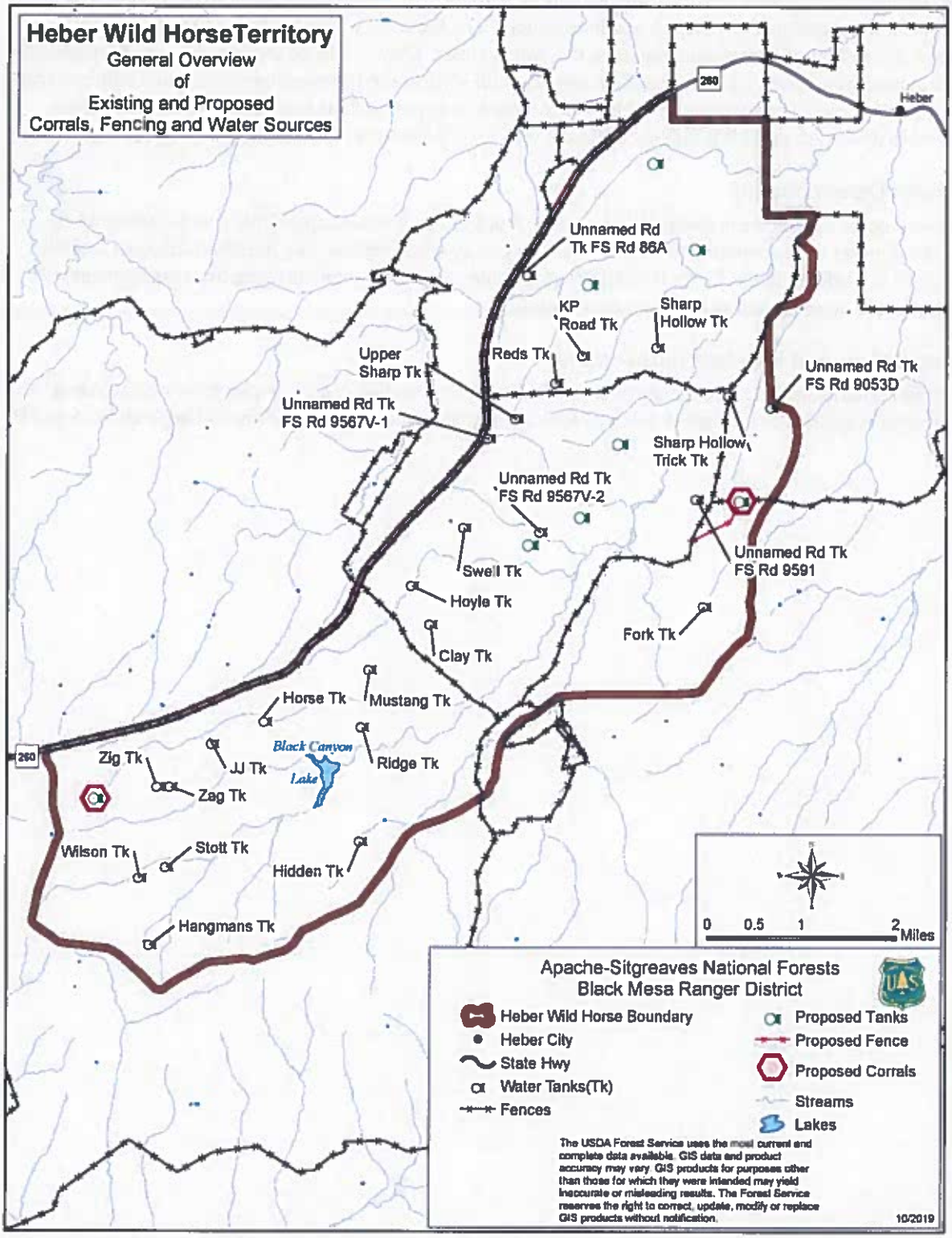

Figure 5. Overview of existing and proposed corrals, fencing, and water sources

Fences or Working Facilities

Handling facilities proposed are a set of pens (corrals) built as appropriate or necessary for management of the Heber Wild Horse Territory and to comply with the comprehensive animal welfare standards (appendix C), designed for human and horse safety. The facilities would be designed to ensure any needed handling of horses could be done in a safe manner. They would be used as places to hold and care for animals temporarily, and to assist, as needed, with sorting and transporting animals and administering fertility controls. The footprint of each facility would be approximately one acre. The accompanying fence is needed to provide a safe and efficient way to help move horses into the handling facility.

Water Developments

Seven locations have been identified to develop stock tanks or other dependable water sources where water appears to be a limiting factor for yearlong use by wild free-roaming horses. Additional facilities may be considered in the future if monitoring indicates they are warranted. Adaptive management will address the option to allow for emergency actions.

Vegetation and Habitat Improvement

Design criteria and adaptive management provides for actions that can be employed to maintain and improve rangeland conditions to enhance forb, grassland, and cover are described in appendices A and B.

Appendix A – Design Criteria and Best Management Practices

Best management practices are a practice or combination of practices determined to be the most effective, practicable means of preventing or reducing the amount of pollution generated by nonpoint sources to a level compatible with water quality goals, and are developed to comply with the Clean Water Act (Forest Service Handbook 2509.22_10.5). The interdisciplinary team followed the guidance in the Southwest Region Forest Service Handbook 2509.22, chapter 20 and the National Core Best Management Practices Technical Guide, FS-990a, in the formulation of resource protection measures related to range and resource management that also function as best management practices to address water quality and watershed concerns. Best management practices will be implemented to comply with the Clean Water Act. Other best management practices are listed to comply with other laws and regulations designed to maintain sound resource conditions. All applicable forest plan guidance will be followed.

The following design criteria and best management practices will be used when implementing the proposed action.

Table 3. Design criteria and best management practices

Number	Objective	Design Criteria or Best Management Practices	Responsible
Weeds-1	Reduce the spread of invasive species	Clean vehicles, helicopters, horse traps, and equipment before entering National Forest System lands, so there are no weed pieces or mud which could carry weed seeds onto the wild horse territory	All Forest Service personnel, or designated representatives, including contractors or partners
Weeds-2	Reduce the spread of invasive species	Do not feed on public lands, except for short-duration feeding used to bait and trap horses or when using livestock grazing as a method of treating weeds. Hay used will be certified weed-free hay. No emergency feeding will be authorized by agency policy.	Forest Service range managers
Botany-1	Avoid impacts to sensitive plants	Previously used trap sites will be used where possible. Trap sites or temporary holding facilities will not be placed in areas where sensitive plants have been documented.	Forest Service biologist
Heritage-1	Avoid impact to heritage sites	Previously used trap sites will be used where possible. Undisturbed areas identified as potential trap sites or temporary holding facilities will be inventoried for cultural resources. If cultural resources are encountered, these locations will not be utilized unless they could be modified to avoid impacts to cultural resources.	Forest Service archeologist.
Aquatics-1	To protect water quality	Traps and temporary holding facilities will not be located within riparian areas, lentic areas, or wetlands.	Forest Service hydrologist
Aquatics-2	Protect water quality and soils	There will be no new roads constructed to facilitate trapping or temporary holding of horses. Existing roads used within riparian areas will be hydrologically functional before, during, and after use.	Forest Service hydrologist

Number	Objective	Design Criteria or Best Management Practices	Responsible
Aquatics-3	Protect water quality and soils	During servicing or refueling of equipment or helicopters used in any operation, pollutants shall not be allowed to enter any waterway, riparian area, or stream course. Refueling areas will be located outside riparian areas, including seeps and springs. If helicopters are used as the gathering technique, all landing and refueling areas will be in prior-approved sites and not within identified riparian areas. Hazardous material spill control equipment and absorbent material will be on-site at all times of fuel use or storage.	Forest Service hydrologist
Aquatics-4	Protect water quality and soils	Vehicles will not travel through seeps, springs, or streams except for use of existing fords on road crossings. Off-highway vehicle travel off established roads within 100 feet of streams will occur only during periods when soil is dry.	Forest Service hydrologist
Aquatic-5	Protect water quality and soils	When constructing livestock fences, locate gates, crossing areas, and watering areas where impacts to streambanks from livestock and wild horses will be minimized.	Forest Service range manager
Wildlife - 1	Northern goshawk	Human presence should be minimized within nest areas during the nesting season of March 1 to Sept 30.	Forest Service biologist
Wildlife - 2	Mexican wolf	Disturbance-causing wild horse management activities on Federal lands are not allowed within a 1-mile (1.6-kilometer) radius around active dens between April 1 and July 31, and around active Mexican wolf rendezvous sites between June 1 and September 30, that the U.S Fish and Wildlife Service determines could adversely affect reproductive success, natural behavior, or persistence of Mexican wolves. Excluded from this definition is any authorized, specific wild horse management activity ongoing at the time Mexican wolves chose to locate a den or rendezvous site nearby.	Forest Service biologist
Wildlife - 3	Raptor nests	Consult with the district biologist prior to implementing management actions to protect active raptor nests from disturbance during the nesting season per forest plan.	Forest Service biologist
Wildlife - 4	Small mammals, birds and bats	Any water sources constructed will have escape ramps for wildlife	Forest Service biologist or range specialist
Wildlife - 5	Wild ungulate movement	New fence construction or reconstruction will be wildlife friendly and should have a barbless bottom wire which is 18 inches from the ground to facilitate movement between pastures and other fenced areas. Pole and other types of fences should provide for passage where they are present. Fence construction within Mexican spotted owl protected activity centers will be outside of breeding season (March 1-August 31) unless protocol surveys indicate non-breeding or absence.	Forest Service biologist or range specialist

Number	Objective	Design Criteria or Best Management Practices	Responsible
Wildlife -6	Mexican spotted owl	No new construction of permanent corrals within Mexican spotted owl protected activity centers. Temporary corrals can be constructed and used only outside of breeding season (March 1-August 31) unless protocol surveys indicate non-breeding or absence.	Forest Service biologist
Wildlife -7	Mexican spotted owl	Conduct protocol surveys prior to initiating any water development that would modify owl habitat or result in effects to nesting Mexican spotted owls. No construction of water developments in Mexican spotted owl protected activity centers would occur during the breeding season (March 1-August 31) unless protocol surveys indicate non-breeding or absence.	Forest Service biologist
Wildlife - 8	Mexican spotted owl	No bait or passive gather would occur in Mexican spotted owl protected activity centers during breeding season (March 1-August 31) unless protocol surveys indicate absence or confirmed active nest sites are greater than 0.25 mile from bait site or gather activities.	Forest Service biologist
Wildlife- 9	Mexican spotted owl	No active gather (on ground) would occur in Mexican spotted owl protected activity centers during breeding season (March 1-August 31) unless surveys indicate absence or confirmed active nest sites are greater than 0.25 mile from gather activities.	Forest Service biologist
Wildlife- 10	Mexican spotted owl	A no-fly zone will be in place for active gathers over Mexican spotted owl protected activity centers during the breeding season (March1 – August 31) unless protocol surveys indicate nonbreeding or absence.	Forest Service biologist
Range-1	Wild horse movement	Excess fences (fences no longer needed for livestock management or resource protection) will be removed where feasible to allow free movement of horses within the territory.	Forest Service range manager and grazing permittees, contractors volunteers, or a combination of these
Range-2	Wild horse movement	After livestock are removed, pasture and boundary gates will be left open to provide wild horse passage and movement and to facilitate the movement of animals between seasonal ranges. Note: This does not include fences constructed to protect springs or other sensitive areas, or fences adjacent to private lands.	Forest Service range managers, grazing permittees, and volunteers
Range-3	Wild horse movement	Any changes in fences or cattle guards for livestock management, including new construction, will be coordinated with the wild horse manager. Design fences to facilitate wild horse movement within the territory.	Forest Service range or wild horse manager
Range-4	Wild horse movement	Where animal concentrations are found along existing fence lines, gates will be widened or added to facilitate movement between areas.	Forest Service range manager and volunteers

Number	Objective	Design Criteria or Best Management Practices	Responsible
Range-5	Fences or gates	If monitoring indicates a need, retrofit existing guards with "Wild Horse Annie" safety features. The interspaces of cattleguards will be retrofitted with rebar to prevent animals from caught in the grill or the cattleguard. Any future cattleguards within the Heber Wild Horse Territory will include this safety feature.	Forest Service range manager or engineer and volunteers
Public Notification-1	Public notification	Develop a communication plan for gathers.	Forest Service public affairs specialist
Public Notification-2	Stakeholder involvement	Work with stakeholders (wild horse advocates and experts, livestock operators, wildlife biologists, etc.) in the planning implementing habitat management and improvement projects within the designated territory.	Forest Service range or wild horse program manager
Veg-1	Maintain adequate cover	Ensure adequate tree cover remains that is consistent with a mosaic landscape as described in the desired conditions, in the major use areas to provide wild horses with shelter during periods of extreme inclement weather.	Forest Service range or wild horse program manager, foresters
Veg-2	Maintain adequate cover and forage base	Limit amount of territory included in prescribed burning to less than 1/3 of total territory per growing season.	Forest Service range or wild horse program manager, foresters, fuels program manager
Rec-1	Protect recreation opportunities	Where practical, conduct horse management activities, including gathers and motorized use, outside developed recreation sites and away from typical areas of concentrated dispersed recreation use, or conduct in seasons of less visitor use.	Forest Service range or wild horse program manager and district recreation staff
Rec-2	Protect recreation opportunities	When constructing facilities, use recreation opportunity spectrum facility and site management guidelines[7] for the recreation opportunity spectrum class where the construction would occur.	District recreation staff
Horse-1	Horse health and welfare	All operations that involve handling of horses will be conducted in accordance with the Comprehensive Animal Welfare Program (CAWP)	Forest Service range or wild horse program manager

[7] https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5335339.pdf

Appendix B – Adaptive Management and Monitoring Matrix

Management Actions Toolbox

Monitoring results would be used to inform adaptive management actions. If monitoring results indicate land health or animal health concerns (thresholds), adaptive management responses could be implemented to correct or improve conditions. The following management tools may be used to help meet objectives if existing conditions show or monitoring indicates a need. All design criteria and best management practices identified in appendix A would apply to the use of these tools. Prior to the implementation of any horse removals the criteria for identifying excess horses would be met and an excess animal removal plan (appendix E) would be developed.

- Tools to manage population growth
  - Increase use of fertility control methods identified in appendix D (Population Management).
  - Bait and passive gather measures may be initiated to administer contraceptives.
  - Bait and passive gather actions may also be used as an ongoing maintenance action for the horse population when populations are approaching the upper quartile of the appropriate management level. Actions would be consistent with guidelines identified in appendix C (Comprehensive Animal Welfare Standards) and appendix D (Population Management).
  - Alter the ratio of male to female animals to reduce population growth by controlling the release of captured male or female animals back into the territory
  - Alter the herd age distribution to reduce population growth by controlling the release of age classes back into the territory
- Tools to change patterns of horse use
  - Develop additional water sources
  - Fence sensitive areas being impacted by horses
  - Increase fence permeability by widening existing, or installing additional gates. Ensure gates are open when livestock are not present
- Tools to maintain horse health and habitat
  - Vegetation treatments including but not limited to juniper removal, mechanical thinning, and prescribed burning within Heber Wild Horse Territory
  - Management actions to maintain or increase genetic diversity such as introducing one to three young animals from outside the area to maintain or increase genetic diversity
  - Develop a response plan to implement during emergency situations such as severe drought or for human health emergency
- Tools to remove excess horses
  - An excess animal removal plan incorporating the Comprehensive Animal Welfare Standards in appendix C will be used to gather and remove. The plan will include the methods used to gather and remove and the disposition of any animals removed. Priority will be bait, passive gather, and removal of small numbers of horse from individual bands or bands that have established permanent residence outside the territory.
  - Horses determined (in consultation with Arizona Department of Agriculture brand inspectors) to be domestic animals will be treated in accordance with State law.

Table 4. Ecosystem health monitoring to be done including objectives, indicator, methodology and the threshold for management action to achieve and maintain desired conditions

Objective	Indicator	Monitoring Methodology	Monitoring Frequency (Short and Long Term)	Thresholds for Management Action	Possible Management Reponses from Toolbox
Maintain or improve ecological conditions in the uplands (as evidenced by stable or positive trend).	Ground cover	Cover frequency (Daubenmire) plots; common nonforested vegetation sampling protocol plots; other protocols as they become available	Baseline: every year for 3 years, then every 5 to 7 years for trend determination. Resume more frequent monitoring if there is a significant disturbance (for example, fire or drought)	Negative trend for 3 consecutive measurement periods or 3 out of 5 measurement periods and horses are determined as a causal factor	Use tools (listed in toolbox) to change horse patterns of use; population growth tools; maintain horse health and habitat; gather and remove. Key areas that are specific to horse use may need to be established including Mexican spotted owl protected activity centers and Mexican spotted owl recovery habitat.
Same as previous cell	Soil condition	Soil condition assessments or soil descriptions	Every 5 years in key monitoring areas	Downward trend in soil condition class over 2 consecutive monitoring periods	Use tools to change horse patterns of use; population growth tools; maintain horse health and habitat; gather and remove
Same as first cell	Herbaceous species presence or absence, composition, or both	Cover frequency (Daubenmire) plots; common nonforested vegetation sampling protocol plots; other protocols as they become available	Baseline: every year for 3 years, then every 5 to 7 years for trend determination. Resume more frequent monitoring if there is a significant disturbance (for example, fire or drought)	Negative trend for 3 consecutive measurement periods or 3 out of 5 measurement periods and horses are a causal factor	Use tools to change horse patterns of use; population growth tools; maintain horse health and habitat; gather and remove

Objective	Indicator	Monitoring Methodology	Monitoring Frequency (Short and Long Term)	Thresholds for Management Action	Possible Management Reponses from Toolbox
Same as first cell	Forage utilization on herbaceous and woody browse plants.	Various protocols with preference given to methods that incorporate degree of use by species.	Annually for the short term and situationally as needed long term	Exceedance of 35% allowable use over 30% of the key monitoring sites 2 consecutive years or any 2 out of 5 years.	Use tools to change horse patterns of use; population growth tools; maintain horse health and habitat; gather and remove
Maintain or improve ecological conditions in riparian areas and wet meadows	Soil condition	Soil condition assessments or soil descriptions	Every 5 years in riparian designated monitoring areas	Downward trend in soil condition class	Use tools to change horse patterns of use; population growth tools; maintain horse health and habitat; gather and remove; or exclosures
Maintain or improve ecological conditions in riparian areas and wet meadows	Herbaceous species presence or absence, composition, or both	Cover frequency (Daubenmire) plots; common non-forested vegetation sampling protocol plots; other protocols as they become available	Baseline: every year for 3 years, then every 5 to 7 years. Resume more frequent monitoring if there is a significant disturbance (for example, fire or drought)	Negative trend for 2 consecutive measurement periods or 2 out of 5 measurement periods and horses are a causal factor	Use tools to change horse patterns of use; population growth tools; maintain horse health and habitat; gather and remove

Objective	Indicator	Monitoring Methodology	Monitoring Frequency (Short and Long Term)	Thresholds for Management Action	Possible Management Reponses from Toolbox
Maintain or improve ecological conditions in riparian areas and wet meadows	Short-term indicators: Herbaceous species utilization, woody species browse. Long-term indicators: Riparian woody species height class, streambank stability and cover	Various protocols with preference given to methods that examine the indicators	Short-term monitoring will occur at 1- to 3-year intervals and consist of herbaceous species utilization and woody species browse measured annually for the short-term and situationally as needed. Long-term monitoring will occur at 5- to 10-year intervals and consist of woody species height class, streambank stability and cover.	Short term thresholds will be exceedance of 30% allowable use of herbaceous species and/or 50% use of terminal leaders on riparian woody species over 30% of the key monitoring sites 2 consecutive years or any 2 out of 5 years. Long-term thresholds will be a downward trend in riparian condition indicated by accepted methodology	Use tools to change horse patterns of use; population growth tools; maintain horse health and habitat; gather and remove; or exclosures
Maintain an open grassland/savannah condition where appropriate (for example, areas with appropriate soils; map areas with woody encroachment) in the Heber Wild Horse Territory	Increased canopy cover, woody encroachment into grasslands	Soil and vegetation mapping (terrestrial ecosystem survey, LIDAR,[8] cover frequency), stems per acre, common stand exam plots or walk-through exams.	Baseline mapping and mapping vegetation treatments	More than 10% canopy cover in grasslands More than 30% canopy cover in savannahs	Vegetation treatments addressed under vegetation management projects within the designated Heber Wild Horse Territory
Maintain open canopy cover in forested areas (ponderosa pine type) in the Heber Wild Horse Territory	Increased canopy cover in forested areas	Stand exam (common stand exam plots or walk-through exams as outlined in Forest Service Handbook 2409.17 and associated supplements)	Baseline mapping and mapping vegetation treatments	More than 40% canopy cover in forested areas	Vegetation treatments addressed under vegetation management projects within the designated Heber Wild Horse Territory)

[8] LIDAR stands for Light Detection and Ranging. It is a remote sensing method that uses light in the form of a pulsed laser to measure ranges (variable distances) to the Earth.

Table 5. Horse population numbers and health monitoring to be done including objectives, indicator, methodology and the threshold for management action to achieve and maintain desired conditions

Objective	Indicator	Monitoring Methodology	Monitoring Frequency (Short and Long Term)	Thresholds for Management Action	Possible Management Reponses from Toolbox
Maintain horse populations within the appropriate management level and ecosystem health parameters	Number and sex of adult horses and foals; reproductive rates	Flight surveys, recorded observation of animals using herd or band book, iNaturalist, or other tools as they become available Fertility control monitoring would be conducted in accordance with appendix D.	Flights every 2 to 5 years on population numbers; as funding allows	Population is approaching the upper quartile, or there is a downward trend in ecological condition, or forage utilization levels are above 35%, or resource damage is occurring in a sensitive area (for example, springs, riparian areas, threatened and endangered species habitat) and horses are identified as a causal factor	Use population management tools; gather and remove
Maintain healthy horse populations within Heber Wild Horse Territory	Genetic diversity	Collect information (hair samples, blood samples, or both) to determine genetic baseline. Obtain samples during gathers operations and administration of contraceptives. Collect genetic material from individuals gathered, in accordance with sampling design.	Short term for baseline; long term every 10 years	Observations of homozygosity[9]	Introduce one to three young animals from outside the area to maintain or increase genetic diversity
Maintain healthy horse populations within Heber Wild Horse Territory	Henneke body condition score	Visual observations and recording of observations.	Continuous	Condition scores of 4 or less	Identify possible causes for poor scores (such as disease, poisonous plants, or deteriorating resource conditions) and apply appropriate management tool based on causal factor.
Maintain healthy horse populations within Heber Wild Horse Territory	Water availability	Inspection of water sources. The Standardized Precipitation Index or its successor would be used to define and represent the severity of drought conditions	Periodic; frequency will increase during drought periods	Standardized precipitation index values of negative 1 or less for the preceding 12 months Water sources that are reliable during an average year are dry	Develop additional water sources; develop response plan to implement during emergency situations; gather and remove

[9] Homozygosity – possessing two identical forms of a particular gene, one inherited from each parent

Objective	Indicator	Monitoring Methodology	Monitoring Frequency (Short and Long Term)	Thresholds for Management Action	Possible Management Reponses from Toolbox
Maintain healthy horse populations within Heber Wild Horse Territory	Forage availability	Forage production and forage utilization will be estimated using various protocols. The Standardized Precipitation Index or its successor would be used to define and represent the severity of drought conditions.	Periodic; frequency will increase during drought periods	Standardized precipitation index values of negative 1 or less for the preceding 12 months will trigger the need to determine forage availability in key areas. Forage production levels of less than 50 pounds per acre would trigger management actions	Develop a response plan to implement during emergency situations; gather and remove

Table 6. Horse movements, patterns, connectivity, and distribution monitoring to be done including objectives, indicator, methodology and the threshold for management action to achieve and maintain desired conditions

Objective	Indicator	Monitoring Methodology	Monitoring Frequency (Short and Long Term)	Thresholds for Management Action	Possible Management Reponses from Toolbox
Individual horse bands are disbursed, able to access areas, or both throughout the Heber Wild Horse Territory	Distribution patterns, number of individual bands	Signs of horse occupancy recorded, development of a herd book or database, possible use of global positioning system (GPS) collars. Monitoring will leverage partnerships to assist with monitoring when possible. Aerial flight surveys.	Periodic; use of GPS collars, microchips, or both to collect information (anticipated data collection of 2 to 3 years) to establish baseline, and would be discontinued after the initial information is gathered. Aerial flight surveys will occur as funding allows. Ground surveys will be ongoing.	Concentration areas or areas with little or no observations of horse use. Horses are occupying areas outside the Heber Wild Horse Territory in areas not designated for their long-term maintenance.	Use tools to change horse patterns of use including bait, passive gather, and relocation back to the Heber Wild Horse Territory when below the appropriate management level

Table 7. Stray horse monitoring to be done including objectives, indicator, methodology and the threshold for management action to achieve and maintain desired conditions

Objective	Indicator	Monitoring Methodology	Monitoring Frequency (Short and Long Term)	Thresholds for Management Action	Possible Management Reponses from Toolbox
Ingress of stray horses is minimized	Sudden increases in population levels	Population inventories and resource or habitat monitoring to document current population levels, growth rates, and areas of continued resource concern	Ongoing	Presence of stray horses (determined to be domestic animals)	Horses determined (in consultation with Arizona Department of Agriculture brand inspectors) to be domestic animals will be treated in accordance with State law

Appendix C – Comprehensive Animal Welfare Standards

Facility Design

Trap Site and Temporary Holding Facility

1. The trap site and temporary holding facility must be constructed of stout materials and be maintained in proper working condition, including gates that swing freely and latch or tie easily.
2. Trap sites should be located close to wild horse locations whenever possible to minimize the distance animals need to travel.
3. If jute is hung on the fence posts of an existing wire fence in the trap wing, the wire must either be rolled up and removed or let down and bundled together into a cable at ground level for the entire length of the jute in such a way that minimizes possibility of entanglement by wild horses
4. Fence panels in pens and alleys must be not less than 6 feet high for horses and the bottom rail must not be more than 12 inches from ground level.
5. Temporary holding facilities must have a sufficient number of pens available to sort wild horses according to gender, age, number, temperament, or physical condition.
    a. All pens must be assembled with capability for expansion.
    b. Alternate pens must be made available for the following:
        i. wild horses that are weak or debilitated
        ii. mares with dependent foals
    c. Wild horses in pens at the temporary holding facility should be maintained at a proper stocking density such that, when at rest, all wild horses occupy no more than half the pen area.
6. An appropriate chute designed for restraining wild horses must be available for necessary procedures at the temporary holding facility. This does not apply to bait-trapping operations unless directed.
7. There must be no holes, gaps or openings, protruding surfaces, or sharp edges present in fence panels or other structures that may cause escape or possible injury.
8. Padding must be installed on the overhead bars of all gates and chutes used in single-file alleys.
9. Hinged, self-latching gates must be used in all pens and alleys except for entry gates into the trap, which may be secured with tie ropes.
10. Finger gates (one-way funnel gates) used in bait trapping must be constructed of approved materials approved. Finger gates must not be constructed of materials that have sharp ends that may cause injuries to wild horses, such as "T" posts, sharpened willows, etc.
11. Water must be provided at a minimum rate of ten gallons per 1,000-pound animal per day, adjusted accordingly for larger or smaller horses, foals, and environmental conditions, with each trough placed in a separate location of the pen (troughs at opposite ends of the pen). Water must be refilled at least every 12 hours.
12. The design of pens at the trap site and temporary holding facility should be constructed with rounded corners.

13. All gates and panels in the animal holding and handling pens and alleys of the trap site must be covered with materials such as plywood, snow fence, tarps, burlap, etc. approximately 48 inches in height to provide a visual barrier for the animals. All materials must be secured in place. These guidelines apply:
    a. For exterior fences, material covering panels and gates must extend from the top of the panel or gate toward the ground.
    b. For alleys and small internal handling pens, material covering panels and gates should extend from no more than 12 inches below the top of the panel or gate toward the ground to facilitate visibility of animals and the use of flags and paddles during sorting.
    c. The initial capture pen may be left uncovered as necessary to encourage animals to enter the first pen of the trap.
14. Nonessential personnel and equipment must be located to minimize disturbance of wild horses.
15. Trash, debris, and reflective or noisy objects should be eliminated from the trap site and temporary holding facility.

Loading and Unloading Areas

1. Facilities in areas for loading and unloading wild horses at the trap site or temporary holding facility must be maintained in a safe and proper working condition, including gates that swing freely and latch or tie easily.
2. The side panels of the loading chute must be a minimum of 6 feet high and fully covered with materials such as plywood or metal without holes that may cause injury.
3. There must be no holes, gaps or openings, protruding surfaces, or sharp edges present in fence panels or other structures that may cause escape or possible injury.
4. All gates and doors must open and close easily and latch securely.
5. Loading and unloading ramps must have a non-slip surface and be maintained in a safe and proper working condition to prevent slips and falls. Examples of non-slip flooring would include, but not be limited to, rubber mats, sand, shavings, and steel reinforcement rods built into ramps. There must be no holes in the flooring or items that can cause an animal to trip.
6. Trailers must be properly aligned with loading and unloading chutes and panels such that no gaps exist between the chute or panel and floor or sides of the trailer creating a situation where a wild horse could injure itself.
7. Stock trailers should be positioned for loading or unloading such that there is no more than 18 inches clearance between the ground and floor of the trailer for horses.

Capture Technique

Capture Techniques

1. Wild horses gathered on a routine basis for removal or return to range must be captured by the following approved procedures:
    a. helicopter
    b. bait trapping
2. Wild horses must not be captured by snares or net gunning.

3. Chemical immobilization must only be used for capture under exceptional circumstances and under the direct supervision of an on-site veterinarian experienced with the technique.

Helicopter Drive Trapping

1. The helicopter must be operated using pressure and release methods to herd the animals in a desired direction and should not repeatedly evoke erratic behavior in the wild horses causing injury or exhaustion. Animals must not be pursued to a point of exhaustion; the on-site veterinarian must examine wild horses for signs of exhaustion.
2. The rate of movement and distance the animals travel must not exceed horse limitations influenced by terrain, physical barriers, access limitations, weather, condition of the animals, urgency of the operation (animals facing drought, starvation, fire, etc.), and other factors.
    a. The appropriate herding distance and rate of movement must be determined on a case-by-case basis considering the weakest or smallest animal in the group (for example, foals, pregnant mares, or horses that are weakened by body condition, age, or poor health) and the range and environmental conditions present.
    b. Rate of movement and distance traveled must not result in exhaustion at the trap site, with the exception of animals requiring capture that have an existing severely compromised condition prior to gather. Where compromised animals cannot be left on the range or where doing so would only serve to prolong their suffering, euthanasia will be performed in accordance with Forest Service policy.
3. Wild horses must not be pursued repeatedly by the helicopter such that the rate of movement and distance travelled exceeds the limitation set by the Apache-Sitgreaves wild horse staff. Abandoning the pursuit or alternative capture methods will be considered in these instances.
4. When wild horses are herded through a fence line in route to the trap, immediately notify the Apache-Sitgreaves wild horse staff.
5. The Apache-Sitgreaves wild horse staff must determine the appropriate width of the opening that the fence is let down to allow for safe passage through the opening. The Apache-Sitgreaves wild horse staff will decide if existing fence lines require marking to increase visibility to wild horses.
6. The helicopter must not come into physical contact with any wild horse. The physical contact of any wild horse by helicopter must be documented by the Apache-Sitgreaves wild horse staff along with the circumstances.
7. Wild horses may escape or evade the gather site while being moved by the helicopter. If there are mare and dependent foal pairs in a group being brought to a trap and half of an identified pair is thought to have evaded capture, multiple attempts by helicopter may be used to bring the missing half of the pair to the trap or to facilitate capture by roping. In these instances, animal condition and fatigue must be evaluated by the Apache-Sitgreaves wild horse staff or on-site veterinarian on a case-by-case basis to determine the number of attempts that can be made to capture an animal.
8. Horse captures must not be conducted when ambient temperature at the trap site is below 10 degrees Fahrenheit or above 95 degrees Fahrenheit without approval of the Apache-Sitgreaves wild horse staff.

Roping

1. The roping of any wild horse must be approved prior to the procedure by the Apache-Sitgreaves wild horse staff
2. The roping of any wild horse must be documented by the Apache-Sitgreaves wild horse staff along with the circumstances. Wild horses may be roped under circumstances which include, but are not limited to the following: reunite a mare and her dependent foal; capture nuisance, injured or sick wild horses or those that require euthanasia; environmental reasons such as deep snow or traps that cannot be set up due to location or environmentally sensitive designation; and public and animal safety or legal mandates for removal.
3. Ropers should dally the rope to their saddle horn such that animals can be brought to a stop as slowly as possible and must not tie the rope hard and fast to the saddle so as to intentionally jerk animals off their feet.
4. Wild horses that are roped and tied down in recumbency[10] must be continuously observed and monitored by an attendant at a maximum of 50 feet from the animal.
5. Wild horses that are roped and tied down in recumbency must be untied within 30 minutes.
6. If the animal is tied down within the wings of the trap, gather operations will cease until the tied-down animal is removed.
7. Sleds, slide boards, or slip sheets must be placed underneath the animal's body to move recumbent wild horses, load recumbent wild horses, or both. Ropes used for moving the recumbent animal must be attached to the sled, slide board, or slip sheet.
8. Halters and ropes tied to a wild horse may be used to roll, turn, or position a recumbent animal, but a wild horse must not be dragged by a halter or rope attached to its body while in a recumbent position.
9. Animals captured by roping must be evaluated by the on-site or on-call veterinarian within two hours after capture, marked for identification at the trap site, and re-evaluated periodically for 12 hours or longer if deemed necessary by the on-site or on-call veterinarian.

Bait Trapping

1. Wild horses may be lured into a temporary trap using bait (feed, mineral supplement, water) or sexual attractants (mares in heat) with the following requirements:
    a. The period of time water sources other than in the trap site are inaccessible must not adversely affect the wellbeing of wild horses, wildlife, or livestock, as determined by the Apache-Sitgreaves wild horse staff.
    b. Unattended traps must not be left unobserved for more than 12 hours.
    c. Mares and their dependent foals must not be separated unless for safe transport.
    d. Wild horses held for more than 12 hours must be provided with accessible clean water at a minimum rate of ten gallons per 1,000-pound animal per day, adjusted accordingly for larger or smaller horses and foals and environmental conditions.

[10] While lying on the ground

e. Wild horses held for more than 12 hours must be provided good quality hay at a minimum rate of 20 pounds per 1,000-pound adult animal per day, adjusted accordingly for larger or smaller horses and foals.

   i. Hay must not contain poisonous weeds, debris, or toxic substances.

   ii. Hay must be certified weed-free

   iii. Hay placement must allow all wild horses to eat simultaneously.

Wild Horse Care

Veterinarian

1. On-site veterinary support must be provided for all helicopter gathers and on-site or on-call support must be provided for bait trapping.
2. Veterinary support must be under the direction of the Apache-Sitgreaves wild horse staff. The on-site or on-call veterinarian will provide consultation on matters related to wild horse health, handling, welfare, and euthanasia at the request of the Apache-Sitgreaves wild horse staff. All decisions regarding medical treatment or euthanasia will be made by the on-site Apache-Sitgreaves wild horse staff.

Care

1. Feeding and watering
   a. Adult wild horses held in traps or temporary holding pens for longer than 12 hours must be fed and watered at approximately 12-hour intervals with water available at all times other than when animals are being sorted or worked.
   b. Water must be provided at a minimum rate of ten gallons per 1,000-pound animal per day, adjusted accordingly for larger or smaller horses, and foals, and environmental conditions, with each trough placed in a separate location of the pen (troughs at opposite ends of the pen). Water must be refilled at least every 12 hours.
   c. Good quality hay must be fed at a minimum rate of 20 pounds per 1,000-pound adult animal per day, adjusted accordingly for larger or smaller horses, burros, and foals.
      i. Hay must not contain poisonous weeds or toxic substances.
      ii. Hay must be certified weed-free.
      iii. Hay placement must allow all wild horses to eat simultaneously.
   d. When water or feed deprivation conditions exist on the range prior to the gather, the Apache-Sitgreaves wild horse staff should adjust the watering and feeding arrangements in consultation with the onsite veterinarian as necessary to provide for the needs of the animals.
2. Dust abatement
   a. Dust abatement by spraying the ground with water must be employed when necessary at the trap site and temporary holding facility.

3. Trap site
    a. Dependent foals or weak or debilitated animals must be separated from other wild horses at the trap site to avoid injuries during transportation to the temporary holding facility. Separation of dependent foals from mares must not exceed four hours unless the immediate decision is made to wean the foals.
4. Temporary holding facility
    a. All wild horses in confinement must be observed at least once daily to identify sick or injured wild horses and ensure adequate food and water.
    b. Dependent foals must be reunited with their mares at the temporary holding facility within four hours of capture unless foals are old enough to be weaned during the gather.
    c. Non-ambulatory wild horses must be located in a pen separate from the general population and must be examined by the Apache-Sitgreaves wild horse staff, the on-call or on-site veterinarian, or both as soon as possible, no more than four hours after recumbency is observed. Water and hay must be accessible to the recumbent wild horses within 12 hours or sooner at the discretion of the Apache-Sitgreaves wild horse staff.
    d. Alternate pens must be made available for the following:
        i. wild horses that are weak or debilitated
        ii. mares with dependent foals
    e. Aggressive wild horses causing serious injury to other animals should be identified and relocated into alternate pens when possible.
    f. Wild horses in pens at the temporary holding facility should be maintained at a proper stocking density such that, when at rest, all wild horses occupy no more than half the pen area.

Biosecurity

1. Health records for all saddle and pilot horses used on wild horse gathers must be provided to the Apache-Sitgreaves wild horse staff prior to joining a gather, including:
    a. certificate of veterinary inspection (health certificate, within 30 days)
    b. proof of:
        i. a negative test for equine infectious anemia (Coggins or EIA ELISA test) within 12 months
        ii. vaccination for tetanus, eastern and western equine encephalomyelitis, West Nile virus, equine herpes virus, influenza, *Streptococcus equi*, and rabies within 12 months
2. Saddle horses, pilot horses, and mares used for bait-trapping lures must not be removed from the gather operation (such as for an equestrian event) and allowed to return unless they have been observed to be free from signs of infectious disease for a period of at least three weeks and a new certificate of veterinary examination is obtained after three weeks and prior to returning to the gather.

3. Wild horses, saddle horses, and pilot horses showing signs of infectious disease must be examined by the on-site or on-call veterinarian.
    a. Any saddle or pilot horses showing signs of infectious disease (fever, nasal discharge, or illness) must be removed from service and isolated from other animals on the gather until such time as the horse is free from signs of infectious disease and approved by the on-site or on-call veterinarian to return to the gather.
    b. Groups of wild horses showing signs of infectious disease should not be mixed with groups of healthy wild horses at the temporary holding facility, or during transport.
4. Horses not involved with gather operations should remain at least 300 yards from wild horses, saddle horses, and pilot horses being actively used on a gather.

Handling

Willful Acts of Abuse

1. Hitting, kicking, striking, or beating any wild horse in an abusive manner is prohibited.
2. Dragging a recumbent wild horse without a sled, slide board or slip sheet is prohibited. Ropes used for moving the recumbent animal must be attached to the sled, slide board, or slip sheet.
3. There should be no deliberate driving of wild horses into other animals, closed gates, panels, or other equipment.
4. There should be no deliberate slamming of gates and doors on wild horses.
5. There should be no excessive noise (for example, constant yelling) or sudden activity causing wild horses to become unnecessarily flighty, disturbed, or agitated.

General Handling

1. All sorting, loading, or unloading of wild horses during gathers must be performed during daylight hours except when unforeseen circumstances develop and the Apache-Sitgreaves wild horse staff approves the use of supplemental light.
2. Wild horses should be handled to enter runways or chutes in a forward direction.
3. Wild horses should not remain in single-file alleyways, runways, or chutes longer than 30 minutes.
4. No equipment should be operated in such a manner as to cause flighty behavior by or injury to wild horses.

Handling Aids

1. Handling aids such as flags and shaker paddles must be the primary tools for driving and moving wild horses during handling and transport procedures. Contact of the flag or paddle end of primary handling aids with a wild horse is allowed. Ropes looped around the hindquarters may be used from horseback or on foot to assist in moving an animal forward or during loading.
2. Electric prods must not be used routinely as a driving aid or handling tool. Electric prods may be used in limited circumstances only if the following guidelines are followed:
    a. Electric prods must only be a commercially available make and model that uses DC battery power, and batteries should be fully charged at all times.

b. The electric prod device must never be disguised or concealed.

c. Electric prods must only be used after three attempts using other handling aids (flag, shaker paddle, and voice or body position) have been tried unsuccessfully to move the wild horses.

d. Electric prods must only be picked up when intended to deliver a stimulus; these devices must not be constantly carried by the handlers.

e. Space in front of an animal must be available to move the wild horse forward prior to application of the electric prod.

f. Electric prods must never be applied to the face, genitals, anus, or underside of the tail of a wild horse.

g. Electric prods must not be applied to any one wild horse more than three times during a procedure (for example, sorting or loading) except in extreme cases with approval of the Apache-Sitgreaves wild horse staff. Each exception must be approved at the time by the Apache-Sitgreaves wild horse staff.

h. Any electric prod use that may be necessary must be documented daily by the Apache-Sitgreaves wild horse staff including time of day, circumstances, handler, location (trap site or temporary holding facility), and any injuries (to wild horse or human).

Transportation

General

1. All sorting, loading, or unloading of wild horses during gathers must be performed during daylight hours except when unforeseen circumstances develop and the Apache-Sitgreaves wild horse staff approves the use of supplemental light.
2. Wild horses identified for removal should be shipped from the temporary holding facility to an Apache-Sitgreaves facility within 48 hours.
   a. Shipping delays for animals that are being held for release to range or potential on-site adoption must be approved by the Apache-Sitgreaves wild horse staff
3. Shipping should occur in the following order of priority: 1) debilitated animals, 2) pairs, 3) weanlings, 4) dry mares, and 5) studs.
4. Total transport time to the Apache-Sitgreaves preparation facility from the trap site or temporary holding facility must not exceed 10 hours.
5. Wild horses should not wait in stock trailers, semi-trailers, or both at a standstill for more than a combined period of three hours during the entire journey.

Vehicles

1. Straight-deck trailers and stock trailers must be used for transporting wild horses.
   a. Two-tiered or double deck trailers are prohibited.
   b. Transport vehicles for wild horses must have a covered roof or overhead bars containing them such that wild horses cannot escape.
2. Wild horses must have adequate headroom during loading and unloading and must be able to maintain a normal posture with all four feet on the floor during transport without contacting the roof or overhead bars.

3. The width and height of all gates and doors must allow wild horses to move through freely.
4. All gates and doors must open and close easily and be able to be secured in a closed position.
5. The rear door(s) of the trailers must be capable of opening the full width of the trailer.
6. Loading and unloading ramps must have a non-slip surface and be maintained in proper working condition to prevent slips and falls.
7. Transport vehicles more than 18 feet and less than 40 feet in length must have a minimum of one partition gate providing two compartments; transport vehicles 40 feet or longer must have at least two partition gates to provide a minimum of three compartments.
8. All partitions and panels inside of trailers must be free of sharp edges or holes that could cause injury to wild horses.
9. The inner lining of all trailers must be strong enough to withstand failure by kicking that would lead to injuries.
10. Partition gates in transport vehicles should be used to distribute the load into compartments during travel.
11. Surfaces and floors of trailers must be cleaned of dirt, manure, and other organic matter prior to the beginning of a gather.

Care of Wild Horses during Transport Procedures

1. Wild horses that are loaded and transported from the temporary holding facility to the Apache-Sitgreaves preparation facility must be fit to endure travel.
    a. Wild horses that are non-ambulatory, blind in both eyes, or severely injured must not be loaded and shipped unless it is to receive immediate veterinary care or euthanasia.
    b. Wild horses that are weak or debilitated must not be transported without approval of the Apache-Sitgreaves wild horse staff in consultation with the on-site veterinarian. Appropriate actions for their care during transport must be taken according to direction of the Apache-Sitgreaves wild horse staff.
2. Wild horses should be sorted prior to transport to ensure compatibility and minimize aggressive behavior that may cause injury.
3. Trailers must be loaded using the minimum space allowance in all compartments as follows:
    a. 12 square feet per adult horse
    b. 6.0 square feet per dependent horse foal
4. The Apache-Sitgreaves wild horse staff in consultation with the receiving facility manager must document any wild horse that is recumbent or dead upon arrival at the destination.
    a. Non-ambulatory or recumbent wild horses must be evaluated on the trailer and either euthanized or removed from the trailers using a sled, slide board or slip sheet.
5. Saddle horses must not be transported in the same compartment with wild horses.

Euthanasia or Death

Euthanasia Procedure during Gather Operations

1. An authorized, properly trained, and experienced person as well as a firearm appropriate for the circumstances must be available at all times during gather operations. When the travel time between the trap site and temporary holding facility exceeds one hour or if radio or cellular communication is not reliable, provisions for euthanasia must be in place at both the trap site and temporary holding facility during the gather operation.
2. Euthanasia must be performed in accordance with the Southwestern Region wild horse and burro euthanasia humane killing policy (2018).
3. The decision to euthanize and method of euthanasia must be directed by the authorized officer or their authorized representative(s) who include, but are not limited to, the Apache-Sitgreaves wild horse staff who must be on site and may consult with the on-site or on-call veterinarian.
4. Photos needed to document an animal's condition should be taken prior to the animal being euthanized. No photos of animals that have been euthanized should be taken. An exception is when a veterinarian or the Apache-Sitgreaves wild horse staff may want to document certain findings discovered during a postmortem examination or necropsy.
5. Any wild horse that dies or is euthanized must be documented by the Apache-Sitgreaves wild horse staff including time of day, circumstances, euthanasia method, location, a description of the age, gender, and color of the animal, and the reason the animal was euthanized.
6. The on-site or on-call veterinarian should review the history and conduct a postmortem physical examination of any wild horse that dies or is euthanized during the gather operation. A necropsy should be performed whenever feasible if the cause of death is unknown.

Carcass Disposal

1. The Apache-Sitgreaves wild horse staff must ensure appropriate equipment is available for the timely disposal of carcasses when necessary on the range, at the trap site, and temporary holding facility.
2. Disposal of carcasses must be in accordance with State and local laws.
3. Wild horses euthanized with a barbiturate euthanasia agent must be buried or otherwise disposed of properly.
4. Carcasses left on the range should not be placed in washes or riparian areas where future runoff may carry debris into ponds or waterways. Trenches or holes for buried animals should be dug so the bottom of the hole is at least 6 feet above the water table and 4 to 6 feet of level earth covers the top of the carcass with additional dirt mounded on top where possible.

Appendix D – Population Management

This appendix provides the operating procedures for various fertility control treatments on wild horses, population management techniques, monitoring and tracking treatments. Once below the appropriate management level on the Heber Wild Horse Territory, population growth suppression management tools will be used to maintain population size within the appropriate management level and extend the time between any needed gather operations. Use of these techniques will also reduce the number of excess wild horses that may need to be removed during any gather operations. Population management should be prioritized for use by the least invasive and least disruptive methods to horse bands and horse behavior.

Any hands-on management action (for example, contracted gather, contraception delivery, etc.) with the horses should be done in a manner of public or private partnership to ensure humane and appropriate outcomes. Actions would be consistent with guidelines identified in appendix C (Comprehensive Animal Welfare Standards). Any removal operations would be consistent with guidelines identified in appendix E (Removal of Excess Animals).

Population inventories and routine resource or habitat monitoring would continue to be completed to document current population levels, growth rates, and areas of resource concern (horse concentrations, riparian impacts, over-utilization of forage, etc.) throughout the project.

Table 8. Population management techniques to be considered

Method	Description	Pros	Cons
Immuno-contraception[11]	Porcine zona pellucida - PZP	Low impact to herd Researched and readily available	Efficacy varies with on-going maintenance (requires retreatments) Multiple applications, gathering, etc. Time of year limited (re-dart after one month) Variable formulations Identification required for re-treatment Not permanent May result in abscesses on mares darted
Immuno-contraception	Gonacon	3- to 5-year efficacy One-time costs (dart, instruments, etc.)	Efficacy varies with ongoing maintenance (improves with re-darting frequency) Multiple applications, gathering, etc. Not permanent May result in abscesses on mares darted

[11] Mares chosen for release to the Heber Wild Horse Territory after capture may be treated with fertility control vaccines to reduce the population growth. This will exclude mares released to improve or maintain genetics within the territory.

Method	Description	Pros	Cons
Sterilization[12]	Vasectomize older stallions, geld younger stallions, spay mares, or both	Low impact to herd with one animal per band treated Greatest impact on long-term population growth Does not disrupt band behavior No ongoing maintenance (individual animal)	Monitor bands for genetic diversity Stallions are the most difficult to handle safely Post-surgical complications can occur (infections) Requires licensed and experienced veterinarians Mixed public perception or reception
Bait and passive gather	Periodically remove small (1 to 3) numbers of horses from individual bands in order to maintain population numbers when populations are approaching the upper quartile of the appropriate management level	Reduces numbers Low impact to herd Lower costs than large gather and removal actions Easier to find suitable locations to receive	Monitor bands for genetic diversity Ongoing maintenance Higher cost than use of immunocontraceptives
Removal[13]	A number of animals are gathered and permanently removed from the Apache-Sitgreaves.	Reduces numbers Good for acute situations which drastically reduce available forage like forest fires, drought, etc.	Finding suitable locations to receive them may be limited; for example adoption or sanctuaries Costs associated with gather and removal is high Mixed public perception or reception

[12] All surgical procedures will be conducted by a licensed and accredited veterinarian in the State of Arizona, and procedures will be done in compliance with State of Arizona standards of practice.

[13] Removal of animals from outside the Heber Wild Horse Territory and on lands not managed by the Forest Service would be given priority where possible. Removal may be done by bait and passive gather, use of helicopters, or both to herd and trap horses.

Method	Description	Pros	Cons
Relocation[14]	1 to 3 studs, mares, or both from a different wild horse territory would be transferred and released to maintain or improve genetic diversity	Horses continue to exist in natural state Support genetic diversity goals	New management area may cause health problems if too different Costs associated with relocation are high New horses may be injured by relocation process Individual animal identification and testing for interstate movement Must have approval from State animal health official (importing state) and a licensed and accredited veterinarian complete certificate of veterinary inspection

Monitoring and Tracking of Treatments

1. Population growth rates of herds selected for intensive monitoring would be estimated every year post-treatment using helicopter or fixed-wing surveys. During these surveys, it is not necessary to identify which foals were born to which mares, only an estimate of population growth is needed (number of foals to number of adults). If, during routine wild horse territory field monitoring (on-the-ground), data describing mare-to-foal ratios can be collected, these data should also be shared with the regional office and Washington office for possible analysis by the U.S. Geological Survey personnel.
2. An immunocontraceptive application data sheet would be used by field applicators to record all pertinent data relating to identification of the mare (including photographs if mares are not freeze-marked) and date of treatment. Each applicator would submit an immunocontraceptive application report and accompanying narrative and data sheets would be forwarded to the regional office and Washington office. A copy of the form and data sheets, along with any photos taken would be maintained at the district office of the Apache-Sitgreaves National Forests (scanned and hard copy).
3. A tracking system will be maintained detailing the type and quantity of immunocontraception product issued, disposition of any unused product, the number of treated mares by collaborating groups, Forest office, and RO along with any type of identification applied and date.

Use of Immunocontraceptives

Zonastat-H (1-year porcine zona pellucida liquid), PZP-22 (a 22-month time-release porcine zona pellucida vaccine), SpayVac ©; Gonacon; or other federally approved immunocontraceptive solution

[14] Hair samples, blood samples, or both would be acquired approximately every 10 years to determine whether Forest Service management is maintaining acceptable genetic diversity (avoiding inbreeding depression). Obtain samples during gathers and administration of contraceptives. Collect genetic material from individuals gathered, in accordance with sampling design.

The following implementation and monitoring requirements are part of any action alternative which involves the use of liquid porcine zona pellucida, pellet PZP-22, SpayVac© or Gonacon:

1. Pesticide use approval (license) must be obtained by State authority.
2. Pesticide use program must be submitted and approved.
3. The porcine zona pellucida vaccine would be administered only by trained Forest Service personnel or collaborating partners.
4. Delivery of the vaccine would be by intramuscular injection into the manufacturers approved site of delivery (deep gluteal or cervical musculature).
5. In the future, the vaccine may be administered remotely using an approved long-range darting protocol and remote delivery system if or when that technology is developed.
6. All treated mares would be microchipped and registered in the U.S. Forest Service national database.

Appendix E – Removal of Excess Animals

Periodically, it may be necessary to remove excess animals from the Heber Wild Horse Territory and surrounding lands to assure populations are maintained consistent with the needs of the forage base, natural resource conditions, and other uses in the area. An excess animal removal plan will be developed for any proposed removal action. Prior to the actual initiation of a removal project, the plan must be approved by the Apache-Sitgreaves forest supervisor.

In the development of any removal plans, the following topics should be considered:

1. Justification for removal: The plan should document the need for removal of excess animals to maintain and improve the forage base for wildlife, domestic livestock, and maintain a thriving population of wild horses. Current studies including range analysis, soils information, production-utilization studies, including levels of desired use by those herbivores competing for the forage base must fully support the action to remove excess animals.
2. Inform and involve actions: Contacts should include local, regional, and national agency personnel along with and involvement of wild-horse-interest organizations and humane associations well in advance of any planned gather action. Local public meetings are required if helicopters are to be used in the removal program (Forest Service Manual 2267.1).
3. Maintenance agreements, relocation, or both: Remove and relocate wild horses if they are excess or they have strayed on private land, and the landowner requests their removal. Relocation must be to one or more of the following:
    a. Some other area designated as a wild horse and burro territory, if suitable habitat and grazing capacity is available. Excess animals will not be removed and relocated in other national forests' wild horse or burro territories unless assurance is determined sufficient capacity is available on the receiving territory.
    b. Custody of other parties, care for excess animals under private maintenance agreement such as:
        i. private adoption
        ii. sanctuaries, long-term holding facilities, or both

Excess animals would be transported to a Bureau of Land Management or Forest Service facility where they would be cared for in accordance with the Wild Free-Roaming Horses and Burros Act and the most current Forest Service regulations and policies (prepared [freeze-marked, micro-chipped, vaccinated and de-wormed] for adoption or long-term holding).

Lists of potential organizations, individuals, or both who may be willing to care for excess animals under a private maintenance agreement should be developed. All applications for private maintenance must be carefully screened to assure humane treatment of the placed animals.

1. Methods of removal: Sufficiently detail any removal action to be taken to explain the operation; for example, roundup, use of helicopter, transportation of captured animals, bait, traps, tranquilization of individual animals, class and age of animals to be removed, and related information. Whether the operation is to be by Forest Service personnel or contract should also be discussed.
2. Timing of removal: Normal weather patterns, condition of animal, age of foals, breeding and foaling seasons should all be considered in planning removals.

3. Care of captured animals: Proper holding facilities, feed, and veterinarian services for sick or injured animals are a necessary part of every project.
4. Cooperation with State livestock boards and inspector: Local livestock inspector(s) should be advised of any planned removal. Any captured excess animals will be inspected by the livestock inspector and a hauling permit (if required by Arizona Department of Agriculture) secured for each animal to be placed under a private maintenance agreement. Keep the Arizona Department of Agriculture personnel and the State veterinarian apprised of all proposed removals. Extend cooperation to livestock boards for any potential disease diagnostic tests that may be needed on captured animals. Certain tests are required for any movement of animals placed in other states. Any branded or previously domesticated animal captured will be handled under regular impoundment and disposal procedures.
5. Contracts for capture: Contracts must specify acceptable methods of capture and assure, through contract clauses and administration, the humane treatment of wild horses.
6. Disposal of problem and nonplaceable animals: Excess animals, for which an adoption demand by a qualified applicant does not exist, shall be destroyed in the most humane manner possible. Justification for each disposal action must be supportable and thoroughly documented.
7. Disposal of carcasses: The burying of an animal carcass should meet State and local health codes. Carcasses cannot be given or sold to local packers or animal-product-rendering plants.
8. Identification of excess animals placed under private maintenance agreements: Permanent hauling permits, photographs, age, color, sex, and other identifying marks will be used for the description of horses placed under private maintenance agreements. Hauling permits will be applied for prior to placement of excess animals with a cooperator. The permit will show the Forest Service as owner, in care of John Doe, Box XX, Heber, Arizona.
9. Case histories: Maintain a file system or folder for each placed animal. Provisions for follow-up checking after placement must be planned.
10. Humane treatment: The capture, handling, and movement of excess animals must be done in a safe and humane manner. Equipment used to transport these animals and facilities to hold them must be strong and of a design which not only confines them but prevents attempted escape. Chutes to constrain animals for tests and marking are preferred over other methods.
    a. Use local veterinarians for the treatment of sick and injured animals. Equine influenza can spread rapidly through confined horses. Separate infected animals and keep in isolation pens away from the main herd(s).
    b. Studs should be separated, hauled, and confined away from mares and colts and should be separated from each other if necessary to prevent injury. In working and handling confined horses, slow, steady movements and experience in such work will prevent many injuries.
11. Safety: Project safety plans should be developed and cover all aspects of the removal program.